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MANHATTANVILLE MUSIC CURRICULUM PROGRAM

Ronald B. Thomas, Director
Manhattanville College
Purchase, New York 10577

August 1970

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HEALTH, EDUCATION, AND WELFARE

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TO

Helena
Lionel
Harry
Cole
Lee
Mrs. van

SUMMARY

The originally stated objectives of the Manhattanville Music Curriculum Program were to develop a music curriculum and related materials for a sequential learning program for students from the primary through high school years. Also included was the objective to prepare effective means for the training of teachers to use this curriculum.

In reaching these objectives over eighty musicians and educators participated in the developmental work. Many of these participants were musician-educators who created experimental stations and field centers to investigate and pilot study curriculum ideas. In the field centers many additional musician-educators, with experience gained through in-service programs, assisted in the study and extension of project materials and learning plans. These working centers of the project were located throughout the country.

The major product of this extensive operation was the Synthesis, a comprehensive curriculum for grades 3 through 12. In addition, MMCP conducted a separate but related study for the development of an early childhood curriculum, Interaction. There were also three feasibility studies: the Electronic Keyboard Lab, the Science-Music Program, and the Instrumental Program. Another area of project involvement was the College Curriculum Study. In this unique effort to create fresh models of undergraduate curriculum, many colleges were involved. Only the first steps of this study had been completed at the writing of this report.

In the development and study of plans for teacher reeducation, 23 workshops for music educators were sponsored by colleges and universities. This outstanding cooperation allowed for extensive trial of teacher training ideas and procedures. Many additional MMCP workshops, privately sponsored by other colleges and staffed by musician-educators who participated in the project, were also held.

In all phases of operation and in the curriculums which were produced, the project has presented alternatives to the status quo of music education. This project has not been concerned with a reshuffling of old habits; nor has it devoted its energies to revising mechanics in order to do the same old thing in a different way. From the ground up, in rationales, objectives, musical perspectives, structure of concepts, learning processes, educational expectations, even in the consideration of what a music class is, the MMCP curricula have been grounded in the logic of a viable art and contemporary educational ideas. The products of the project have made available to the profession another choice in educational operations in music. As proven in numerous classrooms, this choice opens new possibilities for learning, for educational development, and for the future of arts in society.

INTRODUCTION

In 1965 the MMCP began with a one-year study of unique and experimental practices in music education. The experiences and investigations of that year provided two pictures of education. One picture was presented as a report of exciting and laudable developments (A Study of New Concepts, Procedures and Achievements in Music Learning; U.S.O.E. #V-008). The other picture was not so exciting, but it too influenced both the direction and determination of this project.

It didn't make any difference where you went, it was almost always the same. Except for very rare instances, music education was a strait jacket where everyone was expected to do, be, think, respond, learn, hear, accept, reject and act in the same way. Little children in Oregon, Vermont, Texas or Iowa all took out their standardized music series books ("We use X series because the colors make it more exciting.") and did the same thing in the same way for about thirty minutes. Why? Because this was what was done with little children in music. By the fifth grade some students had an instrument and some didn't. Those who didn't took out their standardized music series books ("We use the one that has recordings, since we don't have many pianos.") and learned notes as well as songs. In Florida, Maine, Michigan, and Arizona those students who had an instrument all had the same kind of lessons, with the same kind of books, in order to learn the same kinds of things and play the same type of pieces in the same kind of bands.

Some students had gone on to music colleges. It really didn't make any difference what school they selected. There was theory I and II, history and analysis, 16th Century counterpoint, ear training and sight singing. All of these were taught from the same kind of books, in the same sequence, in the same learning environment, for the same kinds of tests. Some teachers at every level had become more clever than others in masquerading the sameness. Some were more successful than others in keeping control, in achieving good test results, or in producing good festival ratings or concerts. But the teachers' success didn't necessarily mean that students were successful.

There were very few alternatives to be found. Music education was a closed box in which everything was highly standardized. The tape that bound the box was method, and differences in methods were at best superficial. (One teacher used the overhead projector, another used the blackboard. One taught by rote then went to notes, another related note values to new math.) The box and the tape really didn't have much to do with music, only with one systematized method of perceiving music. There was little if any allowance for individual differences in perception or projection of musical thought. In spite of the fact that the vitality of music is derived from the uniqueness of thought of the creative musician, music education had become a monolithic system to program people to uniformity of perception. How tightly woven was this programming scheme? Consider the following.

1. Music education dealt almost entirely with finished products and computational systems. From kindergarten through college, students

studied pieces and the formulae for making more of the same kinds of pieces. What the products looked and sounded like and how they were packaged were practically the only considerations of the music classes. The basic nature of musical ideas and musical materials which had spawned formulae and products were seldom considered. Education dealt with music largely as an external and objective reality rather than as an intrinsic means for organizing thought and expressing oneself. There was little room in the study for the perceptual exploration which characterizes the art.

2. The finished products, compositions, used in education were always the same, as were the analytic systems. In these pieces all the students were expected to hear the same things in music and identify the same items. They all had to memorize the same data, techniques, and skill information in generally the same sequences. Regardless of the uniquenesses of the indivuduals when they entered the class, they were all held accountable for the same data about and perspective of music when they left the classroom. It was not acceptable to consider structure in a fresh way, or turn off Mendelssohn. Students could not explore clusters or random pitches, in fact, there was no real student exploration of any kind. Pianists accompanied choral groups; classical guitarists played at home.

3. Musical values were totally standardized. Things were all labeled as good and bad, right and wrong. Educated people were those who liked the right pieces and listened to them in the right way. People who had different perspectives and tastes were of a lower caste and did not get good marks. If one had subscribed to all the right values, he could then dabble in other fields where rights and wrongs were not yet so clearly established. For example, it was acceptable to venture into electronic music if one had a background in the "real values". On the other hand, to allow students to create their own musical values from personal experience in electronic or serial music was heresy. The control of perspectives began with an indoctrination in so-called fundamentals (note reading, key signatures, triads, certain pieces, etc.). These were formulated to constrict value judgments to the prescribed perspective and set the stage for the domination of the student.

The MMCP set out to create an alternative for music education.

GENERAL OBJECTIVES OF THE PROJECT

The ultimate and major purposes of this project are as follows:

1. To prepare a curriculum guide and related materials, flexible but focused, for a sequential program of music education for grades one through twelve. Specific course outlines and materials for the training of teachers to work with this curriculum will also be devised.

   Emphasis will be placed on the development of procedures for learning which utilize "discovery" approaches and the student's intuitive and inductive reasoning powers. In addition, the program will remain sensitive not only to today's specific curricular needs, but to the changes in organizational patterns and learning theories that are evolving in education.

   It will be the aim of this curriculum to provide each child, while in a classroom situation, with the opportunities for personal judgment and involvement, individual musical and intellectual growth, and development of his own creative talents.

Other objectives, subordinate to the above, are as follows:

2. The development of a meaningful sequence of basic music concepts in the terms of the understanding of children in grades one through twelve which will promote and motivate continued musical growth.

3. To clarify, extend, combine, and further develop and test those ideas and experimental efforts of music educators throughout the country which have been identified and investigated by the Developmental Activities Program at Manhattanville College, A Study of New Concepts, Procedures, and Achievements in Music Learning as Developed in Selected Music Education Programs.

4. To more closely unify philosophies and directions of music teachers at all levels and in all areas of music education.

5. To develop a curriculum which would expand the teachers' confidence, ideas, and flexibility in the classroom, and assist them to be musically creative themselves.

PROJECT OPERATIONS

The principal commitment of the MMCP was to develop an efficient and productive learning program for students at all levels of public school education. In this the term curriculum was considered in its broadest possible connotation. All aspects of the total learning milieu, the learning and teaching processes, the educational environment, the mechanics of when and how classes should meet, all considerations of objectives, as well as the fundamental substance were regarded as a part of the curriculum challenge.

In addition to preparing curricula for schools, the project began a college curriculum study during the fourth year of operation. Since this involved quite different procedures, the work of the fourth year is described after the review of the work on school curricula.

Phases of the Project

The principal part of the curriculum investigation and development dealing with school music was achieved in three phases. The first was devoted to extensive experimentation, the second to the development of curriculum structures, and the third to field study and refinement.

Phase One. The first year, beginning in the summer of 1966, was principally devoted to operations intended to generate a perspective of students' learning potentials, the problems of curriculum reform, and a wide variety of classroom procedures. This stage may be considered as the "what would happen if ..." period for much of the year was spent exploring the effects of various educational strategies in classrooms. Nothing of traditional practice was regarded as sacrosanct. All factors related to subject matter and learning systems were treated as questionable items. Established objectives for music education were set aside in a search for insight about educational operations which have meaning to the students.

From the experience in the many classrooms working with the project, a great deal of insight was gained regarding the students' manner of personal involvement in music. The need for innovative procedures in learning was established. Thoughts concerning intrinsic versus extrinsic motivation emerged. The learning style of the students as contrasted with the classroom style of the teacher became a serious question. Problems of retention, concept formation, skill use, aural sensitivity, educational closure, etc. were identified and considered.

This cycle of experimentation and questioning led to a concern for the appropriateness of substance and educational process which ranged far from accepted practices. It soon became apparent that there was little evidence available about the students' potential for understanding at any grade level. Consequently, similar strategies and processes were often tried in classrooms from kindergarten to college in an attempt to gain clues about sequence, time, the students' direction of inquiry, and effective learning processes. The response of the students to new information and fresh experiences in gaining this information was carefully studied. Since at this early stage it was often difficult to know precisely what the child had gained conceptually, the attitudes of the student toward his own accomplishments became a most effective barometer for assessing the effects of various educational practices.

During this period there was a great deal of interaction between all those working within the project. Ideas, observations, problems, and successes were continually shared. Information gained in one classroom was immediately passed on to many other project teachers in order to assure the broadest possible exploration and evaluation of this data.

From the information gained through classroom experimentation and persistent questioning, the first stages of the MMCP curriculum were formulated during the last half of the first year. A basic core of concepts and related factors of skill development, environment, process and objectives were shaped from the observed logic and enthusiasm of students in the experimental classrooms.

Phase Two. The second year of the project was largely devoted to the refinement and synthesizing of the information gained in the first exploratory period and the organization of this information into a feasible curriculum. From the experiences of the previous period it was obvious that a successful curriculum should encompass much more than a list of important data or even of basic concepts. The MMCP curriculum would have to be a highly integrated plan of action in which all operational components were designed in consideration of the student, the subject matter, and broad educational objectives. Antecedent to all other decisions, an identification of the basic nature of music was clearly demanded. It was only with a highly delineated philosophical rationale regarding the character and significance of music that other elements in a learning program could be realistically weighed. The initial act of curriculum formation, therefore, was the preparation of a rationale identifying the fundamental characteristics of music. This served as a statement of artistic and educational policy through which all subsequent decisions were screened.

With the rationale prepared, thoughts immediately turned to the substance of the curriculum. During the first phase, there was a growing awareness that students did not hear what we presumed they heard, did not necessarily understand ideas which they parroted back to teachers, did not link information to construct larger thoughts in the way we believed they did, and did not care about many of the skills demanded of them. On the contrary, it was clear that they heard things and were extremely sensitive to musical factors which the teacher sometimes completely overlooked or summarily dismissed in an attempt to make his own point. Students, especially at the early stages of learning, exhibited an intense interest in timbre and would spend a considerable amount of time making what to them were appropriate decisions. Activities in pitch discrimination were certainly far more of a concern to the teachers than the students. Unfortunately, students were too often turned from their own lines of significant observation to the teacher's musical interests, thus dampening their own sense of wonder and inquiry.

From classroom experimentation and sensitive appraisal, the perceptive patterns of children became more apparent, and the structure of a conceptual framework for learning which allowed the students to use their own interests, observations, and their natural way of viewing and building ideas began to take shape. The preparation of the spiral curriculum, even in its early form, allowed for a comprehensive study of problems related to the sequence of concepts, and in fact, a reassessment of what the basic concepts are.

Along with the conceptual framework, extensive thought was given to the processes for learning. Experiences in experimental classrooms showed that the type of involvement through which the students acquired information was as significant as the information itself. The students' understanding of information and their attitudes toward it were largely shaped by the nature of the learning experience. It was not merely an acceptance or rejection of information. The connotation of ideas varied with the context in which these were presented. For example, recordings of music presented as items for general listening were regarded by the students on an entirely different basis from records which were made available as reference samples for their own musical ideas. Dynamics assumed a high level of importance when this type of control of sound was a factor in the students' own compositions. In many instances, even with basic ideas, the way an item was perceived had far-reaching implications. "What is a quarter note?" "A short sound." "A length of time." "A dot with a stem." "Something on a staff." "Two eighth notes." "One beat." Obviously, all of these viewpoints did not lead to similar conceptual uses, and the manner in which the information was acquired bore heavily on the interpretation of what a quarter note was and on its value to the learner.

With this awareness of the significance of the processes of education, plans for classroom activity and procedure were devised. Relevant information from the work of Piaget, Bruner, Holt, Woodruff, and others was utilized within the framework of the rationale. Successful strategies in experimental classrooms were identified, analyzed and used to form the basis for further inquiry.

The concern for process led to the defining of the conditions of the educational environment, the teacher's role, effective scheduling, and material preparation. Thoughts on all of these items which bear so heavily on the total problem of learning were investigated with the same tenacity as substance and process had been. Conclusions in these areas became part of the total curriculum plan.

During the second year, classroom activity increased considerably to include more students from a wider range of educational circumstances. Schools throughout the country with a variety of social and economic conditions joined the project to test the efficacy of new curricular ideas. Observations by many educators, both in and out of the project, contributed to revisions of many facets of the curriculum. From the extensive feedback of the many teachers working in the project, the sequence of concepts in the spiral curriculum and thoughts regarding learning conditions and strategies were continuously refined.

Phase Three. During the third year of operation, the work of the project was concentrated on four objectives. These were the refinement and field testing of all curricular items, the initial investigation of a separate curriculum for early childhood, the preparation and testing of plans for the reeducation of teachers to enable them to use the new curriculum, and an intense effort to develop an assessment instrument which reflected the objectives of the program.

The refinement of the curriculum was carried on in much the same manner as the previous year. The major difference was in the operation of classrooms aligned with the project. To meet the requirements of the project, cooperating schools functioned either as experimental stations where new ideas were developed or as field centers. The purpose of the latter was largely one of field testing. In practice, systems of operation, sequences, and mechanical plans were first tried in the experimental stations where basic problems were analyzed. If the particular plan showed promise, it was passed on to the larger field centers for further trial. From this experience, the composite picture of a practical plan for the organization of a classroom music lab took shape. The feedback of information from the centers allowed for a further clarification of the problems and potentials of the plan. This system of experimentation, field testing, feedback, and further experimentation proved most profitable. All plans of curriculum substance, process, and environment were proven operationally.

An analysis of our previous experience in the primary grades indicated that the new spiral curriculum was not appropriate for very young children. It was evident that a special program geared to the inquiry and experience levels of students in kindergarten through second grade was needed. This, in effect, was a pre-cycle program since the spiral core of musical concepts was organized into cycles of increasing complexity and concept discrimination. Through the cooperation of the Central Atlantic Regional Educational Laboratory such a program was explored. Working in inner-city schools in Washington, D.C. and Baltimore, Maryland, teachers associated with MMCP began a period of experimentation with primary children which paralleled the first year's activities of the project. Students ranged in age from two to nine years. Many were from deprived areas.

While the curriculum was still in the formative stages, experimentation with teacher reeducation procedures began in many field center school systems. This experimentation took the form of in-service programs and proved most effective in allowing for an isolation of the problems involved. Essentially there were four issues present. Teachers generally lacked sufficient musical information to cope successfully with the creative musical exploration of the students. Teachers often were reluctant to consider educational goals other than those of performance and skill achievement on which the teacher's status was based. Many music educators were so method-oriented, that a sensitive analysis of the students' needs and the veracity of educational habits was most difficult. Finally, many music educators had not experienced personal creative accomplishment in their own field which would give them a sense of artistic security in new musical or educational thought.

A program of teacher reeducation which specifically dealt with these issues was developed through experimentation in field centers. This program was first tested in additional in-service programs and then in a broad program of summer workshops. These workshops, sponsored by colleges and universities throughout the country, involved music educators from every teaching level - primary grades to college.

At early stages subjective assessment of the student's attitude about his involvement was adequate to form opinions on the efficacy of various classroom strategies and other curriculum factors. Since the learning program was sequential yet cumulative, it also was possible to make generalized observations regarding conceptual development. Most of the strategies were task-oriented and left many options to the student. The student's abilitity to handle these problems imaginatively and to make appropriate musical choices indicated a certain mastery of the concepts involved. However, as the program became increasingly refined it became imperative that assessment procedures be made more explicit.

A survey of available assessment materials proved fruitless for many reasons. Many testing materials required verbal descriptions of musical thought and were considered unreliable. Any inability to translate musical thoughts into words influenced the results dramatically. Many tests were focused on idiomatic analysis, a few on procedural judgment, but none were found adequate in the area of creative thought. In available tests awareness of sound was limited to elements of pitch, duration, etc. in isolation from one another, or was concerned only with the recognition of commonplace items. No assessment instruments were located which dealt with analytical, judicial and creative thought in purely aural terms, or which were compatible with the sequence of conceptual development of the new curriculum. It therefore became necessary to construct an assessment instrument which reflected the objectives of the educational experience. Work toward this end proceeded during the year and one model was created. Wide scale testing of this model, however, was not possible because of time.

MMCP Consultants

From its inception, the Manhattanville Music Curriculum Program involved many professionals in all phases of curriculum development. Included were music educators, educators from other fields, composers, and curriculum experts. In the project operation all of these people shared the responsibility for the creative input of ideas and the development of the total learning program. In planning sessions, there was no distinction between teachers and others working on the curriculum. All were regarded as indispensable experts who brought equally important though sometimes different perspectives and experience to the program.

Teacher Consultants. At the proposal planning stage of this project, a decision was made to involve as extensively as possible music educators who were actively teaching in the classroom. It was believed (and this assumption was completely verified through later performance) that many music teachers were excellent musicians with outstanding performance, creative and interpretive talents. Many had knowledge, experience, and skills in music equal to those of the college specialist or the professional musician. The major differences between the music educators and other musicians lay in the direction the teachers chose to use their talents and in their positive attitudes toward change. They were not egocentric in the sense that they felt overly protective about their own level, type or position of expertise.

In addition to their musical attributes, the classroom experience and the sensitive humanistic concern of the music educators were considered to be vital in curriculum development. Many were very aware of educational advances in other fields and had attempted to apply new cognitive findings and contemporary educational ideas in their own work. They were generally quite aware of the worth, quality, and to some extent, new potentials of music education, and had open and inquisitive minds about possible advances within their profession.

During the first year, nineteen music educators from the greater New York area were chosen to function as an experimental team. Their role as teacher consultants within the project was very demanding. Most of those involved devoted their entire school teaching time (with the excellent cooperation of school administrations) plus thousands of planning hours to the project. In this they created new educational strategies, experimented with various types of approaches, tested many sequences of concepts, and observed and reported on items concerning the students' direction of inquiry and tendencies in creative exploration. They questioned results, offered alternatives, contributed new thought about styles and means of operation, and researched basic music concepts for clarity and authenticity. Their classrooms were laboratories for both the students and the project. The students explored musical concepts through creative strategies, and the teachers experimented with processes and substance to gain insight about the child's way of learning and his reasons and capacities for achieving.

The backgrounds and teaching responsibilities of these music educators differed considerably. Educational backgrounds ranged from the baccalaureate to the doctorate degrees. Teaching experience varied from one year to over 20 years. Approximately half of those involved had professional performance, conducting, or compositional experience. In their teaching assignments nine teachers had classes at the primary or elementary level, while eight were responsible for junior high or high school classes. Two of the nineteen teachers were employed in college music departments. In age the teachers ranged from twenty-three to forty-eight. There were only two identifiable common characteristics. All of the teachers had strong musical capabilities and were completely dedicated to educational careers.

As the work of the project progressed it became obvious that few of the personal differences listed above were significant in the teachers' creative development and implementation of new educational procedures. No single item of age, background, previous training, or experience could be identified which was related to the teachers' effective contribution to the project. There was, however, one significant difference which did affect the individual input, personal security and extent of involvement. Those teachers who had artistic and creative lives outside of the classroom, who were not dependent on the students for their own musical or artistic fulfillment, were considerably more successful in meeting the challenges of the curriculum work. They were willing to experiment more broadly, and were capable of sensitive appraisal of the students' attitudes and sense of intrinsic accomplishment. It was not necessary for these teachers to hold to old educational habits or perspectives in order to acknowledge their own worth, justify their own expertise, or satisfy their own ego.

At the end of the first year a second group of nineteen educators joined the project. As contrasted with the first teacher-consultants (many of whom continued to work within the project) the predominant number of new participants were music education directors or administrators whose responsibilities included some form of supervision of the teaching program of many teachers. Others in the second group had classroom responsibilities but were also in a position of curricular influence within their school systems.

The new group differed in another respect. Where the teachers who joined the project first were drawn from the greater New York area, the educators who joined in the second year represented a broad cross-section of the United States geographically, socio-economically and in educational practice. They came from inner-city schools and affluent suburban areas, from schools with strong cultural emphases and from those with a minimal attention to music. Geographically the spread ranged from Washington to Florida and from Arizona to Connecticut.

The reasons for this broad representation were four-fold. First, it widened the range of school and classroom demands, thus permitting a much greater opportunity for the trial and evaluation of the curriculum ideas that were taking shape. Second, the new teachers brought fresh viewpoints, questions and problems which further focused the total work. Third, their school situations allowed the project to begin experimentation with retraining processes for teachers. Fourth, through their influence and contacts in their own areas they promoted an interest by music educators throughout the country in the ideas being developed within the project.

Twenty-five of the teacher-consultants from the first two years continued to participate in the project during the third year of operation. In addition to those officially involved, however, the project benefited from the unofficial involvement of 408 music educators who went through the many in-service programs conducted by teacher-consultants. A large number of these teachers adopted the new curriculum in their own classrooms and contributed vital information to the project.

Program Consultants. Since it was the purpose of this project to explore the means and ramifications of the music curriculum as intensely as possible, twenty-two specialists, many with widely recognized expertise in related fields, served as program consultants. Their function within the project was to stimulate ideas, make recommendations in their special areas, and consider the reliability and validity of the total curriculum. The extent of involvement of these individuals ranged from occasional meetings to continuous participation over the three-year span. Included were experts in three general categories: music, music education, and contemporary education and curriculum.

The seven program consultants in music were selected for the value of their experience as involved musicians. Each was active as a creative producer of music and had an interest in bringing his insights and background to education. Their perspectives of music were drawn from their own experience as composers, as adventurers, experimenters and contributors to the art rather than from participation in studies about music. The attitudes of these musicians toward music strongly influenced the emphasis on the active rather than passive nature of the curriculum and the focus on student experience and judgment as contrasted with conformity and the acquisition of data. This does not suggest that there was uniformity in the creative perspectives or opinions of these individuals. The contrary was true. The areas of particular interest of these musicians ranged from electronic music to jazz. The input of this variety of thought was important in keeping the study broad in its dealing with musical values and open-minded in the consideration of objectives and of individual student reaction.

Program consultants from the field of music education also assisted the project in critical areas. Some were concerned with the philosophy of music education and offered advice and constructive criticism about the underlying rationale and focus of the program. They suggested alternative viewpoints and assisted in assuring that the nature of student involvement remain aligned with the philosophical basis of the program.

Other program consultants helped to explore questions of assessment which were raised by this project. They also contributed to a review of available tests and procedures for assessment in order to ascertain the possible relationship between these existing materials and the new curriculum being prepared. In addition to these specific responsibilities two of the seven program consultants served as critics and advisors on all project operations.

Eight of the program consultants were education experts and innovators in fields other than music. Through their participation the project gained in two ways. First, they brought ideas, questions and viewpoints to the project which were not colored by prior experience in music education systems. Their analysis of situations most often offered a fresh perspective. In their recommendations there was often an alternative way of considering a problem. In meetings they continually raised questions which were sometimes so obvious to the music educator that they were overlooked.

Second, it was considered vitally important that this curriculum project in music make use of the best educational thought available. All of the education program consultants had experience in the large field of curriculum reform today. They had been associated with curriculum development in other fields. They brought to the project a wealth of experience and practical information which contributed significantly to the total work. Particularly in the fields of cognitive research and related educational developments, their insights strongly influenced the direction of the MMCP.

In addition to these teacher and program consultants, a number of classroom teachers at the primary and elementary levels made very strong contributions to the project. The majority of these classroom teachers were involved with the project in the development of the precycle or early childhood program. They officially became a part of the MMCP team when the project assumed responsibility for this program in June of the third year. Other classroom teachers assisted in experimentation in special areas of skill development or on feasibility studies of new procedures and curriculum concepts.

Consultants' Workshops

During the project a total of four workshops or long-term sessions were held for consultants. These were the preparation and planning periods where the general orientation of teacher consultants for project involvement was carried out and general classroom plans were made.

Workshop I. The first activity of the project was a five-week, six-day-per-week workshop for nineteen music educators[1] and other experts who were to carry out the initial plan for experimentation. The teachers, selected for their musical and educational acumen, were actively employed as music teachers in classrooms which ranged from kindergarten to college. All were from school systems or colleges in the suburban areas, within a 40-mile radius of New York City. This allowed for constant interaction between all of these involved in the experimentation and immediate communication with the project director as the year progressed.

The agenda of the workshop dealt with music, processes of creative investigation, philosophical purpose, and related education theories. The nature of activity was largely that of personal involvement. Few moments were spent in lectures or extrinsic presentations. Many hours were devoted to individual and group investigation, creative exploration, and personal research. The major emphasis in music was on the contemporary scene, but works from the renaissance, baroque, and other periods of the past were also included as was non-western and so-called popular music. During the latter part of the workshop the focus was on the transfer of personal experience into educational operations. Plans were formulated for beginning classroom experimentation and other functions of the project.

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[1] See page 32

Workshop II. At the conclusion of the first experimental year, the same group of teacher-consultants/classroom experimenters met for a two-week, six-day-per-week follow-up workshop. While part of the time was spent in a similar course of personal inquiry as that employed in the first workshop, the main emphasis was on the preparation of a first-draft curriculum. The experiences of the preceding year were reviewed in detail by all of the consultants. Classroom sequences of concepts, indeed, even the forms of concepts, were thoroughly questioned in the light of the classroom study during the year. Considerable attention was also given to all the factors of process that could be identified at that time. The patterns of interaction among students, the time consideration of strategies, the mechanics of room management, etc., were all weighed by those who had been involved with classroom experimentation and by other consultants. After this session, the first synthesis of the curriculum was prepared (it was later revised and extended many times) to form the basis for a more structured investigation.

Workshop III. Another workshop was held during the second summer for the additional nineteen music educators who were selected to join the project. The basic format was close to that of the initial workshop. It was also of a five-week, six-day-per-week duration and dealt largely with musical and educational inquiry. There were, however, two major differences between the workshop for the first-year teachers and this program for the second-year teachers. First, the second-year teachers had the product of the experimental year for guidance. By knowing what had worked and by knowing the conclusions of the early experimenters, the new teacher consultants had a certain amount of security in venturing into new areas. Second, rather than focusing solely on classroom operations, the second workshop laid plans for the development of in-service teacher retraining programs to be conducted by the teacher consultants in their own school system. In preparing for this, the participants had both the format of their own workshop and the information from the first year of classroom experimentation to draw from. 1/

Workshop IV. At the end of the second year a fourth session of one week was held for all of the teacher consultants and the principal program consultants. Again, approximately two-fifths of the workshop time was spent in musical inquiry and discovery. It was strongly believed that only through continued personal musical involvement could the teachers remain completely sensitive to the students' exploration and conceptual investigation. Also, the interaction of

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the consultants as musicians as well as educators played a vital part in establishing and maintaining a high level of mutual respect and personal enthusiasm. The larger proportion of time was used to examine the classroom and in-service work that had just been concluded. All activities, processes, observations, and conclusions were scrutinized by all of those involved. Thoughts about structure, reached after the first year, were reexamined after the experiences of the second year and revised where necessary. This time of concerted introspection also opened up new areas of questioning which were not recognized previously. Skill problems, the special characteristics of early childhood, and other questions were isolated for further consideration and classroom experimentation during the coming year.

Communication Processes

Throughout the first exploratory year, constant communication between all of the participants and with the project director was absolutely necessary. From the point of view of classroom experimentation, it was important that new strategies be assessed immediately and that students' reactions be shared and compared. Problems with classroom procedures had to be solved without delay. It was essential that positive situations and individual successes be identified and explored by others.

From the point of view of individual progress, the process of constant communication within the group contributed much to feeling of personal security. At the outset of the project (this changed considerably as the project progressed) the majority of teacher consultants worked in school systems with other music teachers who did not grasp the nature or importance of curriculum experimentation and were sometimes openly critical. The continuing relationships with other teacher consultants were significant in maintaining a high level of personal confidence and motivation.

For these reasons, four lines of communication were formed. One was visits by and conferences with the project director. Another was visits by teacher consultants to the experimental classrooms of others in the project. The third means was large group interaction sessions of one or two days. Finally, questionnaires and written reports were frequently used.

Observations and Personal Conferences. During the first year the director made many observation visits to all classrooms associated with the project. Customarily these visits included a talk with the school principal to stimulate interest and quell doubts (the increased noise level in rooms where children were exploring sounds was sometimes disconcerting and needed explaining), a planned observation of a particular class or classes, and a brief discussion with the teacher consultant. In these visits an extraordinary amount of information was collected pertaining to every area of curriculum concern. The teacher's style of action, factors relative to the students' intrinsic motivation, problems with skills of notation and dexterity, difficulties in concept understanding and transferral, etc. were noted and catalogued for further investigation. Differences in classroom environments and the relationships of these classrooms to student involvement were also studied. Matters relative to concept sequence, cumulative judgment, inductive reasoning, awareness and interest levels were compared and weighed. In many instances, unexpected student reactions, musical concerns, or directions of inquiry were recorded and brought back for the consideration of the entire team at large group sessions. Many of these unanticipated observations, such as the students' concern for timbre over pitch, and the drastic differences in musical thought with and without notation, led to in-depth studies which considerably influenced the design of the curriculum.

Teachers' Visits. Most teacher consultants found visits to one another's classrooms to be both stimulating and informative. Successful procedures and physical arrangements were imitated or used as a basis for new ideas. Fresh ways of handling classroom learning and social situations led to a clarification of the reasons or problems involved. Often such visits helped the visiting teacher to become aware of conceptual, procedural, or material problems that existed but were not previously identified in his own classes. In general, the freedom to observe learning in process without the pressure of immediate responsibility for classroom operations led most teacher-consultants to an increased level of personal sensitivity to the whole learning-teaching atmosphere.

Large Group Meetings. Spaced throughout the first year were six major sessions attended by all or most of the teacher consultants and by key program consultants. There were three broad purposes for these one- or two-day conferences: the brainstorming of identified problems, the reporting and explaining of significant developments and the furthering of personal musical inquiry. Since teachers from all levels worked together at these meetings (they often were involved with similar strategies in their classroom regardless of the grade level), the interaction was of considerable value both musically and educationally. Often the point at issue was a musical concept which needed more definitive clarification. At other times it concerned instrumental techniques or other skill problems. With the broad range of musicianship within the team, most musical questions were thoroughly explored and usually resolved. Questions of a cognitive nature were often much more troublesome. It was soon found that prior experience and training contributed little to an understanding of the sensitive issues which were raised. Who were the creative students? Were any not creative? How could the teacher tell what was perceived? How and why should perception be controlled? What is closure, and why does it thwart discovery? It was only through considerable exploration and from a search for information in recent cognitive studies that answers began to emerge.

As at all MMCP gatherings, musical exploration at the conferences was at the teachers' rather than at the students' level. Compositions written by members of the group were performed, fresh compositional devices were investigated, and new musical experiences were shared, for only the teacher who has intimately experienced the excitement of creative exploration could understand and foster this attitude in the students.

Questionnaires and Reports. During the first year three questionnaires dealing mainly with the teachers' and students' attitudes were used. The teachers' attitude toward their experimental work was considered of great importance because it provided the best available mirror of the program. All of the teacher-consultants were considered to be exceptional teachers. All had achieved a recognized measure of "success" prior to their participation in the project. When, having abandoned other objectives and modes of operation with which they were familiar, they felt more successful as teachers and had an increased degree of satisfaction from their classroom work, this was significant. Their enthusiasm was gained from a heightened sense of pride in themselves as professional music educators and was the result of feedback from the students. Questions regarding student involvement also were important both in assessing progress and in making decisions for new directions.

Most teacher consultants offered many reports during the first year dealing with everything from accounts of student accomplishment to the response of visitors in experimental classrooms. Since such reports were not formally structured, they were a constructive means of self-expression. Fears and artistic questions were expressed with the same intensity and honesty as pride in accomplishment.

Meetings with Program Consultants. Discussions between the program director and key program consultants were carried on continuously during the first year. There were many meetings with one, two, or three of the consultants in music and education, plus numerous telephone calls and pieces of correspondence. Since program consultants also often participated in meetings with teacher consultants, the majority of the dialogue dealt with issues and evidence drawn from classroom activity. In this way the thoughts and advice of men of outstanding abilities were focused on even the smallest problem. Their insights were shared with all others in the project.

Continuing Communication. During the second and third years of the project, the same lines of communication were kept open but on a reduced basis. Because of the distances involved, only two two-day meetings were held with the entire group of teacher consultants each year, and visits by the project director were limited to a maximum of three per year to schools outside of the New York area. There were, however, ten small group sessions ranging in attendance from five to sixteen in the second year, and nine such conferences in the third year. The vast majority of these meetings dealt with specific curriculum issues since the structure and definition of the learning program were developing rapidly at this stage.

Of course, visits by the director to the classrooms of teacher consultants in the New York area were continued. This was necessary because these teachers were still involved in classroom experimentation on a more extensive basis than teachers in field centers throughout the country. While the visits by teacher consultants to one another's classrooms were made less frequently, written reports increased appreciably. Through project correspondence and newsletters, much of the news and many of the thoughts of these reports were circulated throughout the project.

MMCP Classrooms

The heart of all project operations was the classroom. It was here that the most reliable information about the student was gained. It was in the classroom laboratory where general notions were transformed into viable strategies and where curriculum ideas and structures were tested. The classroom was also the major vehicle for student input into the program, and the arena in which new roles for both teachers and students were defined. Throughout the entire project, the classroom was a source as well as a proving ground for ideas.

During the first year of the project each of the nineteen teacher consultants chose from one to six classes in which to begin initial experimentation. The breakdown of classes by grade level was as follows: first grade in two schools, second grade in two schools, third grade in two schools, fourth grade in three schools, fifth grade in three schools, sixth grade in three schools, junior high in five schools, high school music in four schools, college theory in one school, college music education methods in one school.

Approximately 2100 students in 81 different classes were involved in the experimental work. The amount of class time varied considerably, ranging from one twenty-five-minute period each week to daily classes of up to 50 minutes. The more generous time allotments were usually at the high school and college levels where the classes were elective. Scheduling practices at the junior high schools also differed: some classes met daily for 1/4 to 1/3 of the year, while others were held twice a week for the entire school year. Block scheduling proved of considerable advantage to the project since the curriculum could be completely evaluated and revised two or three times during one year.

All of the teachers and classes involved worked in many similar ways in spite of the variance in grade level. Common to all were creative compositional activities, freedom to use intuitive judgments, avoidance of unrelated theoretical or computative complexities, emphasis on aural discrimination, and the focus on concept rather than methodology. All of the classes encouraged the students' personal discovery of musical elements, structure and meaning. Unique perceptions of musical occurrences were encouraged and respected. The student participated constantly in all phases of musical thought as composers, conductors, performers, and evaluators.

The actual strategies used in the classroom were also similar at all grades, differing mainly in level of sophistication. They were generally consistent with those strategies formulated at the workshop by the entire MMCP team. Concepts involved the nature and basic manipulative potentials of the elements of music and the value and purpose of musical structure in terms of simple design. All strategies were carried on as experiments in the procedure of the scientific method. A problem was presented by the teacher or students as a creative musical assignment, the students then made hypotheses regarding the construction of the composition including the use and organization of the various musical elements, and composed a composition. Finally, their efforts were proven aurally in performance. Evaluations of the musical validity and appropriateness were made by the class, the teacher, and the composing student.

Also consistent in all classes was the attempt to maintain continuity in strategies. All learning was considered cumulative, and all new musical concepts were presented in a familiar musical context, as an outgrowth or extension of the previous compositional experience and musical perceptions.

With the broadened scope of the project in the second and third years, many additional classrooms became involved in some way with the project. By September, 1969, the total number of music educators involved as teacher-consultants or as teachers who had completed in-service courses or summer college workshops officially aligned with MMCP reached a total of 687. Since the majority of these teachers adopted the basic curriculum ideas in their own classrooms, the estimate of students whose classes were based on the curriculum developed by the project was well over 120,000 by the fall of 1969. Of course, all of these teachers did not participate directly in the developmental work of the learning program, but many helped to substantiate its direction through their enthusiastic accounts of their own experience and musical perceptions.

Actually, rather than increase the number of classrooms directly involved, the project held the experimental and pilot study stations to a minimum. This was expedient for two reasons. First, the nature of operation demanded intimate contact, close observation and frequent interaction, and the project had only one staff member the first and second years, and two staff members the third year. Second, experience showed that increased input into the curriculum was not proportionate to the number of people involved. Most often two or three classes at one grade level concentrating on a particular problem yielded more information than many classes less tightly focused.

During the second and third years, classrooms were set up to serve three different functions (of course, in operation there was a considerable overlap): continued experimentation, pilot study of curriculum, and the study of the effectiveness of in-service and other teacher retraining programs. Schools in the greater New York City area were primarily assigned basic developmental roles and were called experimental stations. Schools in other sections of the country, called field centers, concentrated on field study of curriculum materials and learning processes and on teacher reeducation. In each experimental station the classes of only one teacher-consultant were involved. In field centers many music educators under the guidance of one teacher consultant became active participants in the project.

In a discussion of pilot study in the classroom, one shortcoming must be mentioned. The curriculum was created to function over a period of many years. It was not conceived as a grade level program, but as a basis for continued learning. Due to the limited duration of the project and the fact that children often changed music teachers at successive grades, there was limited opportunity for a study of children's development within the curriculum for more than a one-year period. This left many serious questions of long-range growth and potential unanswered. Within the experimental stations, however, there were many students who participated in experimental classrooms for two, and a few for three years. Since the curriculum was evolving over this period, these classes could not be regarded as true representatives of second or third-year responses. At best, they provided limited suggestions of the potentials and problems associated with a long-term exposure.

In-Service Programs

In the field centers the initial emphasis was placed on in-service programs for music teachers within the school district. In size these field center school districts ranged from 10 music teachers to a full-time music staff of 148. The purpose of these in-service programs was two-fold: to develop workable teacher reeducation techniques, styles, and formats, and to prepare teachers for classroom pilot study. There was a sense of uniformity in all of these first teacher classes in that they were largely attempts to scale down the experiences of the teacher-consultants' workshops. There were, however, many differences between the various programs. Some in-service classes dealt mainly with musical strategies at children's levels. Others maintained the discovery process but dealt with music on the teachers' level of understanding. In some programs personal in-service experience was transferred to classroom action immediately, while many in-service programs did not try to deal with classroom interpretation of the curriculum until a considerable backlog of personal involvement had been established. A few programs presented the overview, the rationale and outline of objectives of the first sessions before creative activity actually began. On the other hand, many teacher consultants delayed explanations and allowed the rationale and objectives to grow out of the teachers' interpretation of their personal feelings about their own creative and musical growth.

The duration of each in-service session, the time of day and frequency of classes, and the total number of classes scheduled also varied considerably. Of course, the strategies employed differed from program to program depending on the participants' skills and resources, the number of people involved, and the teacher's perspective and experience.

During this second project year, seventeen in-service programs were held. In size they ranged from 3 to 19 teachers. The class time spent in in-service courses varied from ten half-hour sessions to 20 two-hour sessions. All in-service programs were voluntary but most carried local school salary credit. The total number of teachers who began these programs was 179; 142 completed the course. Of those who finished, 67 teachers (47 per cent) voluntarily adopted the new curriculum as the principal basis for their own teaching. An additional 51 teachers (36 per cent) made partial use of the MMCP educational program in their own classes bringing the total number of teachers who became involved with MMCP to 118 (83 per cent).

At the conclusion of these first attempts with in-service programs, a review of results and differences was conducted. Questioning focused primarily on the nature of teachers' application of MMCP curricular ideas in their classrooms and all possible links between this and workshop experience. In this analysis all operational details were discussed to find the relationships between training processes and the teachers' acceptance of a new curriculum and successful implementation of it in the classroom. From this analysis, plans were devised for the second round of in-service programs scheduled for field centers in the third year of the project.

This second set of in-service programs was generally more structured in the use of time. From the conclusions drawn from the analysis of the results of the first in-service programs, classes covered philosophy and classroom mechanics in greater detail. Musical involvement was almost entirely directed toward the teacher's limits rather than imagined students' perspectives. A greater attempt was made to assist the participating teachers to a feeling of security in both musical and educational exploration and judgment. In all, 26 in-service programs were held during the 1968-69 school year (not including summer workshops) with 229 in attendance. 184 finished these courses. While the dropout rate continued at approximately the same level (around 20 per cent), the percentage of teachers who voluntarily made significant use of the new curriculum in their own classes improved to 94 per cent.

True pilot study of the curriculum through the teachers who completed in-service courses proved to be next to impossible. Often those teacher consultants who taught the in-service classes were unable to consistently follow up with teachers because of the extensive administrative demands on their time. In a number of districts, it was physically impossible for workshop leaders to even visit the classrooms of those teachers who had completed in-service programs. The telephone and infrequent get-togethers were the only practical means of communication. In many cases, indeed a remarkable number of cases, teachers who completed in-service work moved to other school districts and further communication was not possible. In some instances these teachers were hired by other districts because of their involvement with the MMCP.

Nevertheless, there was a broad level of feedback which was of extreme value in refining both the curriculum and the teacher reeducation programs. Much of this information substantiated conclusions drawn from work in experimental centers, but fresh ideas were also introduced. Evidence of almost identical responses from students over a wide span of ethnic and socio-economic conditions and geographic areas strengthened beliefs in this style of discovery learning. The similarity of problems encountered by teachers in all areas of the country established priorities in making revisions and refinements in process and substance. The exciting accomplishments of many teachers in field centers in extending curricular ideas to new educational situations, whether open schools, ungraded schools or various types of scheduling procedures, provided new insight into potential applications of curriculum ideas and the mechanics involved.

Based on the broad evidence gained in the two years of in-service programs, it became obvious that this type of teacher education and orientation program had very strong limitations. The teachers were tired after a day in classes and found it difficult to manage in-service assignments in addition to their daily teaching responsibilities. The week-long gap between classes created retention and attitudinal problems. As with children, the lack of time for immediate follow through with creative exploration lowered the level of personal enthusiasm. Conflicts with school programs, concerts, faculty meetings, and school vacations also had deleterious results. In brief, the large scale changes in attitudes, classroom style, philosophical outlook, musical perspective, and types of educational anticipation demanded by the new curriculum required a more thorough immersion than could be arranged in weekly in-service programs. It was necessary, therefore, to develop a large-scale testing of a teacher education system which allowed for complete and continuous involvement without extraneous interruptions.

College Workshops

An opportunity to study the values and processes of teacher education in very intensive situations was made available to the project in the summer of 1969. Through the cooperation of 13 colleges located in all areas of the country1/, a series of workshops dealing with the MMCP curriculum was initiated for music educators during summer vacations. In all, 241 teachers from 34 states attended these workshops. The arrangement with these colleges was as follows: each school accepted the full financial and administrative responsibility for its own workshop, while the project controlled the curriculum and established the environmental conditions and time schedule. The faculties (each workshop had a faculty team of two) were comprised of MMCP teacher and program consultants who were employed by the colleges for the workshop. All workshops required 60 hours of class time and an estimated 30 hours of outside preparation. All but one were scheduled for a six-hour day, two-week period. Except for the one workshop, participants were requested not to schedule other classes or activities during this session. In the one exception, the workshop was of four weeks' duration and met for three hours a day. Many teachers who attended also elected another class for the other half of the school day.

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While the curriculum for these workshops was largely prepared from the experiences with in-service programs, it was also designed to meet the particular advantages of the available concentrated time. In process, the workshops duplicated those processes which were advocated for classroom use, and for the most part followed the sequence of concepts developed in the spiral curriculum. Of course, the depth of musical concern of the teachers was far greater than that of children. The level of inquiry of the workshops was geared to the teachers' musical knowledge and prior experience, not to anticipated levels of children's musical investigation.

In addition to the creative exploration, each workshop spent time on educational philosophy. The reasons and purposes of music education were questioned from various philosophical perspectives, and the rationale for the direction of the MMCP was thoroughly investigated. Also, time was provided for discussion of the various means of transferring the personal musical experience of the workshop into educational strategies for the classroom.

A complete assessment of the residual effects of these programs was not possible because of obvious communication problems. The immediate response of the teachers during the workshops and shortly thereafter indicated that the impact of the intensive and concentrated workshops far exceeded that of even the most efficient in-service programs. It also led to the conclusion by both the workshop participants and the project that the logic and procedures of these retraining programs should become the basis for the revision of undergraduate programs for educators in music. Plans for follow-up meetings to share successes and discuss problems and creative solutions were made by the participants of many of the workshops.

Relating to the Profession

This project has operated in an established educational field. The field, with many thousands of practitioners at all learning levels, also has had a structure of organizations extending from the local to the national level which has influenced the conditions of music education. As an activist movement, one major problem faced by this project was how to prepare for and expedite broad educational change at the classroom level in view of the existing political structure.

In Development. At the initial planning stage it was necessary to make a decision regarding the relationship of this project to professional music education organizations. There were many factors to take into account. The stated objectives of the project were not unique, many committees of professional organizations had accepted similar charges. The largest national organization had assumed a parent status for another music project which prejudiced its attitude toward other educational ventures. The most immediate and efficient way of reaching music educators was through established organizations. The backing of the major professional organizations could be advantageous in effecting changes in educational practices. On the other hand was the argument that too close an alliance with established professional organizations could inhibit the work of the project. There was little evidence that the numerous organization committees had prompted any significant changes in the status of music education. Indeed, it was probable that the primary function of large professional organizations was more the protection and expansion of established conditions than the development of alternative educational thought or opportunities.

The decision was made to operate completely independently from any political entanglement with the established educational hierarchy in the investigation and development of all curricular ideas, but to take advantage of all dissemination opportunities made available through existing organizations as well as through other sources.

In Dissemination. In spite of its independent character, there was a continuing effort throughout this project to let the profession know what was going on. There were two reasons for this. First, the curricular products of the project would be of absolutely no value if music educators did not develop a spirit of anticipation about them. One efficient way of insuring an eventual demand was to keep the work of the project in front of the teachers whenever possible so that they would develop an awareness of and interest in this educational program.

The second reason was related to practical assistance. In acquainting music educators with project efforts, a great deal of questioning was developed which was extremely important in shaping directions and educational strategies. In their questions about the curriculum, many music educators raised issues, problems, and suggestions which may have otherwise been overlooked. In answering issues and criticisms MMCP people were often forced to more intensely consider the underlying logic of their own work.

In this attempt to inform the profession of MMCP intent and activities, the teacher-consultants carried the predominant responsibility. Working independently, yet sanctioned by the project, they made use of every opportunity to communicate their enthusiasm about the work of the project. They addressed groups at colleges, professional conferences, faculty meetings, seminars, parent-teacher associations, educational conventions, etc. Articles relating to their own experiences within the project were published in magazines, newspapers, and intra-school publications.

In all 216 presentations of the project were reported including seven at division or national conferences, 31 at state conventions, 67 at meetings in colleges or with college representatives, 40 at school district meetings, 51 at parents' meetings (not including recitals, etc.), 15 at education conferences, two on television, and three at other meetings. There also many articles in newspapers serving local school districts and nine articles written by consultants for professional magazines.

Of particular note is a meeting held on the Manhattanville campus during May of the third year. In attendance were representatives of 19 colleges who met to consider the curriculum development work of the project and its implications for teacher education. Problems of college curriculum development, the issues facing music in education, and future possibilities for constructive action were discussed. A decision was reached by the majority in attendance to pursue a program of coordinated curriculum investigation in cooperation with the project. There were many reasons for this decision, the internal difficulties in initiating a curriculum reform program, the strength that could be gained from group action, the vast information that could be shared, the leadership that could be given to the profession from a collective effort, and finally because the major problems identified at the meeting were common to all of the colleges.

Connections with Other Curriculum Projects

This project did not operate in a vacuum. A deliberate effort was made to interact with other groups who were concerned with contemporary curriculum in order to capture the best thought available. Even the development of the original plans for the project was strongly influenced by projects in the fields of math and science. The work of the Madison Project, in particular, influenced the focus and, to some extent, the procedures outlined in the project proposal. In addition, the project established ties with the Mineola Arts Project in Mineola, Long Island, the ES 70's Program of the U.S.O.E., the Arts in General Education in University City, Missouri, the Wilkes-Barre Schools Project of the Research for Better Schools Laboratory, and the Educational Media Council, and has participated in planning stages of the arts curriculum work of the Humanities Foundation. Contacts with ESI in Boston also proved stimulating and provocative.

In a less direct way, the project has benefited from the experiences of other projects, both local and regional, which have operated in MMCP field centers. Such interaction at the local level of project operations has proved advantageous not only in local activities but has filtered back to influence aspects of the total project.

Collaboration with CAREL. In the summer of 1967, the project director met with representatives of the Central Atlantic Regional Educational Laboratory to investigate possibilities of mutual cooperation in the development of an early childhood music program. From this contact a period of common assistance developed, first on a consultation basis and later through direct interaction. This relationship proved to be valuable and productive since CAREL had funds that allowed for concentration on the early childhood phase of the total curriculum work, while MMCP had already developed some of the criteria for such a curriculum. In addition, the style of curriculum investigation and development used by the project provided a format for curriculum operations within CAREL.

Beginning in August, 1968, two of the teacher-consultants of MMCP were employed by CAREL as managers of its early childhood music curriculum efforts, one area of its total early childhood arts program. During that school year, the predominant amount of project investigation and thought relating to the primary school music curriculum was channeled through CAREL. Through constant communication, the project maintained very close ties with the CAREL operations and influenced the work of the music component to assure its consistency with the direction of the total curriculum being developed by the project.

At the termination of CAREL in May, 1969, the early childhood curriculum work in music became the direct responsibility of the project. The two former MMCP teacher-consultants who worked for CAREL were retained in an identical role by the project. A majority of the classroom and music teachers in the Baltimore and Washington areas who had participated during the previous year continued to be involved. Through the cooperation of the Montgomery County School District in Maryland, additional teachers were selected to work within the project.

The Fourth Year

The fourth year of the project could not be regarded as a fourth phase of the previous curriculum development work. While creative investigation of earlier curriculum concerns did persist, the major attention of the project was directed toward new areas of investigation. It was, of course, impossible and undesirable to separate the project entirely from its previous responsibilities. A new revision of the Synthesis was prepared incorporating many new insights gained from continuing exploration of the potentials of the music lab. Many of the schools that had been involved with the project continued to provide in-service programs for their own teachers. A number of extensions of the MMCP approach were effected by teachers who had served the project as teacher consultants. Indeed, one of the most exciting outcomes of the year was the shouldering of responsibility by teachers who had worked with the project. As the project shifted its emphasis to new areas, many of the teachers independently accelerated their own efforts to refine and extend the ideas of the Synthesis.

In addition, MMCP teacher workshop programs were again held in the summer of 1970. Ten colleges, many of whom had not previously been associated with the project, sponsored two-week summer programs. These workshops followed the format developed and studied the previous year. Again, teachers from the project and program consultants were employed by the sponsoring colleges as teaching teams. Because of the number of applicants as well as experiences of the previous summer, the enrollment of the workshops was increased from 24 to 30. In addition to these official workshops, at least nine other summer workshops of somewhat shorter duration were held at other colleges. These teacher programs were conducted independently by teachers who had participated in the project.

Dissemination activities continued on a par with the previous year. There was little reason for the project during the fourth year to keep track of the variety of presentations, newspaper and magazine articles and other dissemination efforts of the teachers who had been associated with the project. In fact, the teachers were so used to this sort of thing that quite often they did not bother reporting these rather continuous occurrences.

The major work of the project, however, was focused on relatively new problems and lines of inquiry. Even the Early Childhood work, although highly related to the previous investigations of MMCP and the Central Atlantic Regional Educational Laboratory, was somewhat reorganized and focused in new directions. The two feasibility studies in Science-Music and the Electronic Keyboard were an outgrowth of previous thought but were new operations. The other area of emphasis, the College Curriculum Study, involved many new people and a completely different process of operation. The fourth year, therefore, was a mixture of phasing out earlier responsibilities and delving into new areas.

The College Curriculum Study. The previously reported meeting of college representatives in May, 1969 was the beginning of a very demanding and exciting opportunity for the project. From the first experiences in the classroom, the conditions of teacher education in colleges had loomed as a formidable deterrent to the implementation of MMCP curricular ideas in the schools. College education simply did not prepare people to meet the responsibilities of the music laboratories. Many things at the college level, from methods of teaching to perspectives of music and student involvement, were often in conflict with the learning programs developed by the project. It was apparent that new opportunities for learning in the schools depended heavily on a restructuring of the college experience for prospective teachers.

As a consequence of the May, 1969 meeting 12 colleges were selected to participate in a very intensive study of college curriculum. These schools represented the broadest variety possible. There were large and small colleges, public and private, progressive and conservative. They were chosen from the east coast, the middle west and the west. Some had initiated innovative programs of their own, while others had not explored new potentials.

This study was undertaken as a cooperative venture. The project served in an advisory role. It also provided the structure for investigating practices, purposes and processes, and the means for interaction between the schools. The colleges set up their own committees to research their own practices and establish their own goals. The purpose of this study was not to develop one monolithic curriculum for all the colleges, but to have each college construct its own innovative plan. In this way, the result would be many fresh educational models available to the profession. Each of these models would present alternatives to the status quo.

Through a coordinating committee with a representative from each college, the work began in December of 1969. Using a variety of materials prepared by the project, the various colleges considered their existing program in terms of the student product which resulted from the learning experience. This was followed by the preparation of rationales, objectives, and projected goals, again in terms of a student profile. Finally each college re-examined the nature and purpose of its various subject areas and considered new relationships and possible structures for their curriculum.

Between December 1969 and June 1970 the coordinating committee held three meetings of two-and-one-half days each. At these meetings the project materials were closely examined and reports of individual problems and progress were shared. These interaction sessions proved of enormous value to everyone involved. The project gained insight into operations at each school, and the schools were able to reinforce each other and avoid duplication of ineffective procedures. In the sessions some school always had a better solution, and the sharing of productive ideas was one of the most profitable outcomes of the meetings.

In addition to the meetings, the project director visited the colleges whenever specific help was needed or unique occasions arose. Some of these occasions dealt with clarifications of issues and potentials, and some emanated from faculty resistance. Indeed, faculty opposition often became a serious drawback in constructive investigation. Fortunately, it was usually resolved. However, at one university the resistance to any questioning of established practices and perspectives proved so overwhelming that the college withdrew from the study. While this one withdrawl was unfortunate, it was far better than the original estimate. Considering the problems of progressive development at the college level and the demands of this study, it was estimated at the beginning of the college program that four schools would withdraw.

On the other hand, exciting progress was evident in the majority of schools. By June 1970, many faculties had already begun to look ahead to new curriculum plans, and many completely fresh ideas were being discussed. One university had completed preparations for an experimental program to be set in operation in September, 1970. Others had specific plans in progress and were aiming toward implementation in the second semester of the 1970-71 school year. As one college administrator remarked, their participation in the MMCP College Curriculum Study had necessitated their moving further in six months than they had in the past 10 years.

The study had some noteworthy side effects. In at least two universities, other schools or departments became very interested in the processes and objectives of the College Curriculum Study. They began constructive investigations of their own subject areas along lines which were parallel to those of the music programs. For example, in the university with completed plans for an experimental program, the freshman curricula in English, foreign languages and physical education were specifically designed to mesh with the new music experiences.

The work of the College Curriculum Study was far from completed at the time of this report. While the cooperative efforts of all those involved in the study had produced remarkable results in a very short time, this could only be considered a first step. This first step was significant, however, for it proved that inert characteristics of higher education could be overcome and the unique operational plan of this study was an effective means for initiating progressive action.

Early Childhood Music Curriculum. As previously reviewed, work toward the development of a music program specifically intended for little children was well underway before the fourth year of the project. With the cooperation of the Central Atlantic Regional Educational Laboratory, there had been an extensive testing of curriculum ideas and investigation of the natural modes of inquiry of very young students. Many other MMCP teacher-consultants had also contributed a great deal of information based on their own creative search for an appropriate curriculum for the primary grades. It was during the fourth year that these many ideas and experiences were translated into an operational curriculum structure.

In the prior years of the early childhood study, practically all of the classroom work was carried out in inner-city schools. These schools were generally considered to be in deprived areas. In the fourth year of MMCP early childhood operations were considerably expanded. While the majority of our teacher-consultants continued their involvement, a number of new teachers joined the developmental work. Most of these teachers were from suburban areas. This made a broader curriculum investigation possible.

Both the inner-city and suburban schools offered excellent opportunities for creative investigation. The administrators and teachers were most cooperative in every contact with the project. Their enthusiastic participation with the project was one of the greatest resources. The dedication of the teachers can not be overstated. For example, when project or school funds were not available, many teachers purchased needed equipment and materials out of their own pockets. It was a rare occasion when a teacher missed a project meeting. And in the classroom, all of the teachers assumed a personal responsibility for the most thorough exploration of every idea.

On the administrative level, principals and supervisors did much more than give lip service. In providing enthusiastic support as well as many material necessities, they had a considerable effect on the success of the operations. They understood what was going on and cooperated in every way. The space for the early childhood offices, for instance, was provided by the North Lake Elementary School in Montgomery County.

An interesting and previously unplanned inclusion was the work of the "Developmental Center for Special Education" in Washington, D.C. The administrator of this school had become acquainted with the early childhood study of MMCP. She requested an opportunity for her faculty to become involved. While their particular circumstances were not central to the project's objectives, the highly skilled faculty were able to adapt MMCP ideas to their own situation. The results of their efforts had serious implications for educational opportunities in the field of special education. The eight teachers of the Developmental Center for Special Education were not officially included as teacher-consultants with the project. Project personnel held workshops for these teachers, but the considerations of curriculum in this circumstance were not within the project's scope. Their work, although aligned with and somewhat supervised by MMCP, was largely their own.

In all, there were 16 classroom teachers and musician-educators who served as teacher-consultants for the Early Childhood study during the fourth year. With one exception, all of the classroom teacher-consultants worked at the primary level, some in ungraded situations. The musician-educators who were involved had supervisory responsibilities which included musical instruction at the primary level.

Since all participating teachers taught in inner-city schools in Washington, D.C., Baltimore, Md., and in suburban schools in Montgomery County, Md., a tight communication system was set up. During the year a total of eight workshops ranging from two to four days in duration were planned with the teachers. The workshops served as training sessions as well as a time for interaction and curriculum development. In addition, individual conferences with teacher-consultants were frequently scheduled to assist teachers with specific problems and to gain information about the operations in the classroom. The major form of communication was classroom visitation by project personnel. All teachers had almost immediate access to the MMCP team and frequently requested visits to their classrooms. A total of over 130 visits were made during the fourth year.

The principal result of all this activitity was the development and pilot study of the Early Childhood Music Curriculum called Interaction. Designed specifically for students from 4 to 8 years of age, it was built around exploratory experiences that were natural to the inquiry of small children. The focus was largely on the process of creative thinking in music and gaining practice in the behaviors of a musician.

Another result was the realization that classroom music can run through the entire educational experience at the early childhood level. In many of the classes, creative musical activities branched out into every facet of the school day. Spelling, reading, writing stories, counting, adding, science, art work, and much of the play activities and mechanics of the classroom often became integrated with the creative musical experience. In some cases music just naturally became the core of much of the learning program.

Of course, this situation was only possible because of the fact that the classroom teacher was the leader of the primary grade music labs. With a minimum of two weeks of preparatory workshop experience and continuous help from musician-educators, the classroom teachers were able to function most successfully. The workshops, as with all MMCP workshops, were designed to provide personal opportunities for musical discoveries. The personal musical experience of the teachers in the workshops provided a sense of security in classroom exploration and a lasting motivation for further musical understanding. A great part of the excitement of this study was that the teachers as well as the students continued to grow as musicians.

The Electronic Keyboard Laboratory. During the course of this project many of the most productive lines of inquiry grew out of almost emergency situations in the classrooms. There was no better example of this than the feasibility study, The Electronic Keyboard Laboratory. With primary grade MMCP music labs creating a great deal of student enthusiasm, interest in the traditionally taught keyboard class was waining. The question immediately arose whether the activities of the Early Childhood Music Curriculum could be adapted to serve as a basis for keyboard experience.

With the cooperation of the Yorkville Elementary School in Baltimore, the elementary music supervisor and the music teacher who taught keyboard classes, a simple test program was set up. In this initial investigation, the strategies were literally adapted from the early childhood study. The response of students and teacher and the observations of the MMCP team indicated that there was excellent potential in a creative keyboard approach, but certain unique problems existed. First, the nature of the instrument was different. Where on classroom instruments the sound was largely controlled by the student, there was much less possibility for student control of sound on the electronic keyboard. Volume and sound envelopes were difficult to control, and timbre, the parameter of sound children most naturally explore, was held constant by the machine. Second, there were physical problems in performance that did not exist with bells, gongs, drums, etc. Finger coordination was underdeveloped, and the students' dextrous limitations were somewhat frustrating.

Third, in exploration activities groups could not be employed in the same way. The physical setup of the room and fixed positions of the instruments necessitated different procedures for student interaction and the sharing of ideas in small and large group strategies. Fourth, because of all sorts of prior experience there was a highly conditioned type of anticipation about keyboard operations. Exploratory activities with the keyboard seemed very natural to the students in the beginning stages. They also had a far greater personal ambition to gain dextrous skills than was evident in the creative activities with less familiar instruments.

From these identified special problems and characteristics of student behavior, a fresh approach to the keyboard lab was prepared and introduced. Basically this curriculum followed the Developmental Phases of Musical Exploration of the Early Childhood Music Curriculum. It also related to the concept spiral of the Synthesis. However, because of recognized dextrous and notational skill demands, the program was sequenced more tightly than other MMCP curriculums.

In the pilot study of the keyboard curriculum the students had two half-hour sessions each week. This was not considered adequate, but limited equipment ruled out any additional time. While there were only nineteen students in the feasibility study, many other classes had use of the electronic keyboard equipment. All of the students in the experimental program were from the third grade.

During this keyboard study, the MMCP Research Associate and the Supervisor of Elementary Music for the Baltimore public school system spent a considerable amount of time in the experimental class. Their purpose was to evaluate the nature of the learning, prepare new materials for students, and help the teacher to understand and become secure in this approach. Except for rare occasions, they did not interfere with the class or work directly with students. These constant visitations were necessary for two reasons. In the first place, the teacher had not had prior MMCP experience; in the second place, in the developmental stages continued professional observations were absolutely necessary for effective planning.

This feasibility study was certainly the most extensive of the three feasibility studies. While the curriculum products were limited in extent of coverage (many more encounters could be developed) the materials which were prepared have been refined and proven through pilot study. This pilot study was, of course, restricted to one class and involved a short period of time. Further study of an extended program with a wider representation of students and teachers was not possible because the project ran out of time.

Science-Music Study. Electronic music crept into the MMCP classrooms very early in the project. First, it was heard on reference recordings to expand musical imaginations. The students soon discovered that vocal and object pieces could be far more exciting with a little tape manipulation. Shortly, generators, filters and other electronic apparatus appeared on the scene, and electronic music became an integral part of the music lab experience. As electronic devices appeared in greater number, questions about sound phenomena and electronics became more complex. What happened to the tape in the tape machines? Why did speakers differ so much? How did the spring reverb alter the duration? What did filters do to make sounds so completely different? These questions could not be ignored, because they reflected the students' perspective of music. It was obvious that the students' curiosity about technology and science was immediately related to their creative interests in music. The students just didn't see the subject matter barrier that education had artificially created.

It became apparent to MMCP that investigation of this barrier was needed. How could learning programs lead to the cross-relation of ideas on an experiential level? Certainly there were many types of integrated study programs, but they were largely built on the manufactured structural concepts of the theorist, not on the natural curiosity of the student. The questions arose: could the integration of subject matter grow naturally from the students' own inquiry and from their own frames of reference? Could the teacher stimulate and guide this by employing processes of investigation and using equipment common to two or more subject areas?

With enthusiastic support and assistance from a number of creative people, including musicians, scientists, and educators, the feasibility study in science-music was begun. In this study there were five steps. First, a conference was held to explore the idea with experts in the fields of science, music and education. Second, at a three-day meeting the discussions of the first conference were translated into classroom strategies built around common processes and equipment. Third, a three-day workshop was held with classroom, science and music teachers to involve them in creative musical experiences with the electronic equipment and the processes of investigation. Fourth, the six teachers selected to experiment with these ideas began their classroom operations. Fifth, after five months of classroom trial, a three-day conference with the teachers was held to assess the results of classroom experimentation.

Unlike the keyboard study, the science-music experiment was very loosely knit. The teachers taught in widely scattered parts of the country. Included were a music teacher and an elementary classroom teacher in Nanuet, New York; two classroom teachers (one with a music background, and the other with a science minor) in Lakewood, Colorado; and an elementary science and a classroom-music teacher in Tucson, Arizona. Frequent communication between the teachers in different districts or with the project was impossible. It was also undesirable. The purpose of this feasibility study was not to test certain materials, but rather to gain some insight about a broad concept of curriculum organization. The teachers, therefore, were very much on their own to explore the basic questions of an integrated learning experience within the framework of the materials prepared prior to the classroom work. They were not limited to using these particular materials; indeed, they were encouraged to develop their own strategies based on their observations of student response. The materials were only sample suggestions of appropriate activities.

Although constant communication was not encouraged, the teachers were never without assistance in problems of music or learning process. Both the elementary music supervisor in Tucson and the music supervisor in Lakewood were MMCP teacher-consultants. Since Nanuet was located close to the project offices, questions from that school could be taken care of promptly.

Interestingly, the prepared materials and strategies had far less of an impact on the teachers than their own three-day experience in the workshop. The strategies they used in class were very closely associated with their own exploratory experiences in electronic music. In the area of science, however, there was a wide range of exploration, some of which was not previously planned. Wave phenomena were explored beyond just sound waves. Electronics, of course, became an area of real interest, not only circuitry but transistors, magnetic fields, and audiotronics. (One fifth grade class in Nanuet built a sound system with 28 speakers, including a crossover network.) Questions about hearing led to inquiry about the structure of the ear and related physiological operations.

The teachers were very resourceful and sensitive to their students. The observations they made about the potentials of this particular kind of study in the elementary school, indicated that even in its raw state this was a very significant experience for the students. They spoke of new interests, greater interaction between students, more self-respect and increased self-reliance. As far as subject matter was concerned, all teachers agreed that what was learned was quite different from the standard program but at least as important. None of the teachers, science or music, felt that their old format was missed by the students at all. The way the learning was acquired and the impact of the experience were felt to be the most important outcomes.

There was little agreement about when this program should take place. In the experiment the teachers had worked with 3rd, 4th, 5th and 6th grades. Each teacher felt that the grade he worked with was the most appropriate.

All of those associated with this study agreed that the experiment had opened new opportunities for allowing students to become deeply involved with various fields. The teachers concurred that after the first few classes, the old subject matter barriers did not exist for them or for the students. The lab had a common process for investigation, and many related areas to explore. All of these investigations influenced a creative and very personal artistic product. After the style of integrating and investigating was established, at times the teachers even felt somewhat inhibited. Why not include many other fields in the lab? In fact, why not break down all of the subject matter barriers?

For the musicians, the science-music lab was a revealing experience. In the classrooms, music was very much a part of life. The wave tank, oscilloscope, orchestra bells, the truck (students in Tucson wrote a concerto for truck sounds) and the trumpet were all related things that contributed to experience. And the experience was personal musical involvement.

Program Consultants

Music

Paul Boepple, North Bennington, Vermont
Henry Brant, Bennington College, Bennington, Vermont
Otto Luening, Columbia University, New York, New York
Lindsey Merrill, Kent State University, Kent, Ohio
Billy Taylor, Channel 5 TV, New York, New York
James Tenney, Brooklyn Polytechnic Institute, Brooklyn, New York
Charles Wuorinen, New England Conservatory of Music, Boston, Massachusetts

Music Education

Herbert Alper, New England Conservatory of Music, Boston, Massachusetts
Robert Choate, Boston University, Boston, Massachusetts
Frank D'Andrea, State University College, Fredonia, New York
Edwin Gordon, University of Iowa, Iowa City, Iowa
George Kyme, University of California, Berkeley, California
Sister Josephine Morgan, Manhattanville College, Purchase, New York
Lionel Nowak, Bennington College, Bennington, Vermont

Contemporary Education and Curriculum

Harry Abt, Nanuet Public Schools, Nanuet, New York
Judith Bregman, Brooklyn Polytechnic Institute, Brooklyn, New York
Peter Dirr, Channel 13 TV, New York, New York
Martin Dishart, Washington, D.C.
Dolores Francis, Washington Public Schools, Washington, D.C.
Dwayne Huebner, Columbia University, New York, New York
Bruce Joyce, Columbia University, New York, New York
Sister Elizabeth McCormack, Manhattanville College, Purchase, New York

Teacher Consultants in Experimental Stations

Richard Bartlett, Cresskill, New Jersey	1966-70
Patricia Batton, Mount Vernon, New York	1966-67
Joanne Beck, White Plains, New York	1966-68
Americole Biasini, Spring Valley, New York	1966-68
George Blaha, Dobbs Ferry, New York	1966-68
Harold Carle, New York, New York	1967-70
Josephine Caruso, Yonkers, New York	1966-70
Marie Culjak, Chicago, Illinois	1967-70
Renee Fisher, Westport, Connecticut	1966-68
Robert Gibbs, Potsdam, New York	1967-69
Arthur Hornberger, Stony Point, New York	1966-70
Barbara Hurley, Farmingdale, New York	1966-70
Fred Mendelsohn, Hempstead, New York	1966-67
Harald Normann, Staten Island, New York	1966-70
Beverly Persky, Yonkers, New York	1966
Lenore Pogonowski, Greenwich, Connecticut	1966-68
Julie Reichling, Larchmont, New York	1966-70
Alfred Renino, White Plains, New York	1966-68
Thelma Rockwell, White Plains, New York	1966-68
Paul Roff, Dumont, New Jersey	1966-68
Robert Thayer, Mount Vernon, Iowa	1967-70
Sister Mary Joseph Umiejewski, Hartsdale, New York	1967-70
Charles Weiss, Farmingdale, New York	1966-68
Florence Ziegler, Farmingdale, New York	1966-67

Teacher Consultants in Field Centers

Walter Barnum, Seattle, Washington	1967-70
Alex Campbell, Lakewood, Colorado	1967-70
Ronald Davis, Fort Lauderdale, Florida	1967-70
Stanley Haynes, Kent, Washington	1967-70
John McManus, Eugene, Oregon	1967-70
Eddie Lou Neel, San Angelo, Texas	1967-70
Richard Neubert, White Plains, New York	1967-68
Ruth Parson, Abilene, Texas	1967-70
Barbara Reeder, Seattle, Washington	1967-70
Robert Revicki, West Hartford, Connecticut	1967-69
Carroll Rinehart, Tucson, Arizona	1968-70
Sister Virginia Saalfeld, Marylhurst, Oregon	1967-70
Sister Ruth Sheehan, Houston, Texas	1967-69
Natalie Wiegel, Portland, Oregon	1967-70

Early Childhood Music Curriculum
Teacher Consultants

Dennis Bryan, Baltimore, Maryland	1968-70
Alice Beer, Baltimore, Maryland	1968-70
Smith Clifton, Rockville, Maryland	1969-70
Vernell Griffin, Rockville, Maryland	1969-70
Frances Hayes, Rockville, Maryland	1969-70
Marcellina Jackson, Washington, D.C.	1968-70
Nancy Kirsch, Rockville, Maryland	1969-70
Ellen Kleinmann, Rockville, Maryland	1969-70
Toolie Minton, Washington, D.C.	1968-70
Dolores Murray, Washington, D.C.	1968-70
Constance Pawelek, Baltimore, Maryland	1968-70
Donna Ploss, Washington, D.C.	1968-70
Yvonne Sine, Rockville, Maryland	1969-70
Rosemary Taft, Washington, D.C.	1968-70
Gay Teran, Baltimore, Maryland	1968-70
Patricia Wilson, Baltimore, Maryland	1968-70

Developmental Center for Special Education
Washington, D.C.

Enid Wolf, Principal

Electronic Keyboard Laboratory

Betty Ambrose, Baltimore, Maryland
Alice Beer, Baltimore, Maryland

Science-Music Lab

Larry Allan, Nanuet, New York
James Guyton, Tucson, Arizona
Mildred Miller, Tucson, Arizona
Patricia Noecker, Lakewood, Colorado
Paul Philippe, Lakewood, Colorado
Richard Wissing, Nanuet, New York

Instrumental Program

George Blaha, Dobbs Ferry, New York
Arthur Hornberger, Stony Point, New York
Robert Thayer, Mount Vernon, Iowa

College Curriculum Study

University	Representative
Arizona State University Tempe, Arizona	Andrew Broekema
Brigham Young University Provo, Utah	James Mason
Cornell College Mount Vernon, Iowa	Alf Houkom
Drake University Des Moines, Iowa	Betty Kanable Francis Pyle
East Carolina University Greenville, North Carolina	Ralph Verrastro
Kent State University Kent, Ohio	Lindsey Merrill
State University College Fredonia, New York	Frank D'Andrea
State University College Potsdam, New York	Allen Richardson
Texas Tech University Lubbock, Texas	Hugo Marple
University of Northern Colorado Greeley, Colorado	John Fluke Dwight Nofziger
Wichita State University Wichita, Kansas	Jacquelyn Boswell

MMCP Summer Workshops 1969

Drake University
Des Moines, Iowa
June 10-20

Kent State University
Kent, Ohio
June 16-27

Colorado State College
Greeley, Colorado
June 23-July 3

Columbia University
New York, New York
June 30-July 11

University of Montana
Missoula, Montana
June 30-July 11

Boston University
Boston, Massachusetts
July 7-18

Peabody Conservatory
Baltimore, Maryland
July 7-18

University of Oregon
Eugene, Oregon
July 21-August 1

Arizona State University
Tempe, Arizona
July 21-August 1

University of Washington
Seattle, Washington
July 24-August 22

State University College
Potsdam, New York
July 28-August 8

Florida State University
Tallahassee, Florida
August 4-15

Maryville College
St. Louis, Missouri
August 11-22

MMCP Summer Workshops 1970

Drake University
Des Moines, Iowa
June 8-19

Maryville College
St. Louis, Missouri
June 15-25

East Carolina University
Greenville, North Carolina
June 22-July 3

Northwestern University
Evanston, Illinois
June 23-July 3

Ithaca College
Ithaca, New York
June 29-July 10

Hartt College of Music
West Hartford, Connecticut
July 6-17

Florida Atlantic University
Boca Raton, Florida
July 6-17

University of Massachusetts
Amherst, Massachusetts
July 13-24

State University College
Fredonia, New York
July 20-31

University of Oregon
Eugene, Oregon
July 13-24
Advanced workshop: July 20-24

THE PRODUCTS OF MMCP

As previously stated, the contractual obligations of the project with the U.S.O.E. were to:

1. prepare a curriculum guide and related materials for a sequential music learning program for students from primary through high school years.

2. develop a meaninglul sequence of basic musical concepts in terms of the children's understanding.

3. more closely unify philosophies and directions of all areas and levels of music learning through the development of a spiral-type curriculum.

4. develop a curriculum which would expand the teachers' confidence, ideas, and flexibility in the classroom, and assist them to be musically creative themselves.

In the achievement of these objectives, the project made considerable progress in the development of curriculum plans and materials which present major alternatives to today's highly standardized music education practices. In goals for education, processes, substance, environment, class structures, teaching-learning relationships, scheduling, and other areas of the total music curriculum, the materials developed by the project offer another perspective of educational experience and a different means for learning.

The extent of operations of the project over the four years allowed, and in some cases necessitated, an expansion of the original objectives. Consequently, the appendix of this report includes two interrelated curricula, three feasibility studies, plans for teacher training programs, and materials which had been used in the investigation and initial development of innovative college curricula.

The Synthesis, the principal curriculum work, presents a plan for involvement and musical growth for students from the third grade through high school. Another curriculum plan, the Early Childhood Music Curriculum, is a process-oriented learning structure for children from four to eight years of age. Outlines of three feasibility studies, one dealing with the acquisition of instrumental skills, another with a science-music study, and a third with an electronic keyboard lab program, present fresh directions for creative experience in special areas. Detailed plans for teacher in-service and workshop programs offer bases for teacher retraining which have implications far beyond either the MMCP or music education. The materials of the initial phase of the college curriculum study offer a fresh way of examining, judging and planning undergraduate learning experiences.

In this age it is inconceivable to think of curriculum in terms of recipe books. The practice of educational materials prepared as methodologies, as rigid "follow the book directions" demanding conformity in presentation and in learning is totally irrelevant to contemporary society. All of the project curriculum materials, therefore, are open-ended and deal with the nature of the learning experience rather than a formulated sequence of learning events. There is considerable emphasis placed on the logic of relationships between the manner of involvement in learning and the acquisition and interpretation of information.

The Synthesis

The major curriculum paper developed within the project is the MMCP Synthesis. In its fourth revision, it is a compilation of the basic principles and curriculum findings of the project translated into an operational plan. Included are the underlying artistic and educational rationales, basic environmental conditions for learning, and process considerations. In this plan the learning experience grows from a core of operational musical concepts based on the student's rather than the teacher's perspective. Also contained in the Synthesis are samples of educational strategies to assist teachers to develop their own course sequences and structures. The concept core has been devised as a spiral curriculum with cycles of increasing complexity and concept refinement. It, like all other MMCP curriculum materials, was planned as a flexible guide for teachers rather than a doctrinaire system for students.

The Synthesis was developed as a long term learning program. It was not conceived in terms of one specific grade or age level. Within the project and in other schools, it has been used effectively as a basis for educational operations from the third grade into college. This curriculum product of MMCP has been included as Appendix A of this report.

Early Childhood Music Curriculum "Interaction"

The Early Childhood Music Curriculum was an outgrowth of pilot study experience with the Synthesis. It was created to deal particularly with the musical inquiry of children from four to eight years of age. The basic strategies of this curriculum, however, have also been used as introductory exploratory experiences in music at many other grade levels.

The main goal is the experience itself; the involvement as a creative, active musician; the encounters with judgment making; and practice in discovering new ideas, new sounds, and new meaning. It also focuses on a basic sensitivity to the elements, materials, and expressive possibilities of music.

Although this early childhood program is closely related to the curriculum described in the Synthesis, there is little emphasis on any formal plan of musical concepts. Rather, the classroom experience is loosely structured around the Developmental Phases of Musical Exploration. There are five such phases: free exploration, guided exploration, exploratory improvisation, planned improvisation, and reinforcement. In terms of sequence, this curriculum is most flexible. It neither has a rigidly prescribed series of strategies nor a specific extent of coverage. It may be extended or shortened depending on the sensitivity of the teacher to the needs of the student.

As with all other MMCP curriculum materials, the Early Childhood Music Curriculum is definitely not "teacher proof". It has been prepared for use by classroom teachers as well as music educators. But it can only become an effective instrument for learning in the classroom where the teacher has personally experienced the thrill of discovery and can relate to this excitement in the children.

This curriculum product of MMCP contains complete descriptions of the operational style and classroom mechanics advocated for the primary grades. It also includes structural designs and a wide variety of sample activities appropriate for little children in a music lab setting. As in the Synthesis, the Early Childhood Music Program has not been developed as a methodology, nor has it been sequenced by grade or age level. It was prepared as a flexible plan for musical operations which could be combined with other experience in music. This curriculum has been included as Appendix B of this report.

The Electronic Keyboard Laboratory

In the development of the Synthesis and Early childhood Music Curriculum many questions about the relationships of skill and concept growth arose. One line of investigation of these questions led to a feasibility study dealing with the electronic keyboard. The report of this study has been included in this report as Appendix D.

This feasibility study was pursued for approximately six months and the results were more detailed than in the other feasibility studies. In its final form, the report of this study includes detailed directions of operational procedures, a rationale that describes the manner in which the keyboard experience is linked with other MMCP curricula, and a sequence of student musical activities, called encounters.

The structure for the Electronic Keyboard Laboratory was linked to both the Early Childhood and Synthesis curricula. While it followed the plan of the developmental phases of musical exploration, it also dealt with basic concepts of music as outlined in the spiral curriculum. The structure of this curriculum was somewhat more tightly woven to accommodate for the dextrous development of the students. It was advocated as a limited period curriculum for children of 9 years of age and older.

The Science-Music Lab

The ideas for the science-music feasibility study evolved from electronic music experiences in the music lab. These experiences led to considerable curiosity about the validity of subject matter barriers and the ways in which they could be removed. In this program the integration of the two subject areas was based on the processes of investigation, the use of common equipment, and the natural lines of relationship between the two fields.

The report of this study contains the reasoning behind this undertaking and accounts of the various types of activities that were developed. There are also specific strategies and lists of reference materials included in the report. While there is much yet to be done to prepare an operational curriculum, the materials of the feasibility study offer a basis for further classroom exploration. There are also a number of unique strategies which could be readily incorporated into a wide variety of learning programs. The experimental study in science-music is reported in Appendix E.

Instrumental Program

The Instrumental Program, included as Appendix F, is an outline of limited instrumental lesson study. This program was initiated to investigate the possibilities of a creative and largely aural approach to instrumental development. In place of lesson books, tape models were used. Instead of prepared exercises, the students created their own pieces to perform. In structure, this learning program paralleled the Synthesis. The emphasis was on conceptual as well as dextrous achievement. Aural memory and aural sensitivity were also stressed.

The report of this feasibility study describes the procedures, the sequence, and the materials which were developed for the instrumental study. The musical ideas presented by the tapes have been included along with the logic behind this particular program. As with the science-music study, the report was not of a completed curriculum. However, many of the specific strategies could be incorporated in other instrumental programs. The entire program as outlined for the trumpet could also be used or modified for further experimentation.

Teacher Reeducation Plans

Appendix C of this report outlines the plan prepared by MMCP for the education of teachers to deal with the curricula developed by the project. It is a crash program of from 60 to 90 hours intended to assist teachers to understand the musical and educational ideas involved. The plan, to be used in conjunction with the Synthesis, calls for experiences which parellel those advocated for students in the music lab. Of course, these experiences must be on the teachers' rather than the students' level of musical understanding.

The College Curriculum Study - Initial Phase

The materials presented in Appendix G of this report were developed by the project for the first phase of the College Curriculum Study. They were designed to force a different perspective of the purpose, procedures and results of college education for students who wish to become music teachers. They were intended for the exploratory phase of a larger program to develop innovative educational plans in music learning at this level.

Included in the report are a variety of instruments which were used to arrive at decisions about the nature of the product of education (student profiles) and analyze the character and relationships of subject matter. Other materials provided fresh ways of considering objectives and processes.

This report of this study, of course, is incomplete. The entire college curriculum study was intended to run for three years and result in the construction and implementation of many alternative models for the freshman and sophomore years.

The Major Product

The materials described above are tangible products. To a large extent they are the things upon which the immediate qualitative judgments of this project will be based. This is unfortunate, for these materials are static and to some extent obsolete by the time they are produced. Education is not materials, it is ideas that are in constant growth. Ideas do not grow on paper, they only grow in people.

The real product of this project could not be bound in a report. It is people and ideas. By August 1970 over 1150 music educators will have become involved with project ideas through workshops and in-service programs. At least 1500 other teachers will have attended workshops, conducted by MMCP teachers, but not officially linked with the project. In addition, over 500 music educators at the college level will have in some way participated in fresh considerations of educational opportunities. These educators in turn will have influenced hundreds of others through demonstration programs, faculty meetings, and in private conversations. Many have not adopted the entire curriculum as a new dead-end street, they have begun their own line of questioning and exploration with project ideas. At conventions, in professional magazines, even in textbooks, ideas about music and people which evolved within the project have become familiar. Thoughts about the style, the process, the goals, and the substance of music education are being expounded by many who have not had formal relations with the project.

This is the product of the project that will make a difference. It is people with ideas, people who have found new reasons and new freedom to question and explore.

CONCLUSIONS AND RECOMMENDATIONS

This project has been conducted as a creative exploration of unknown areas in music learning. Its purpose was not to prove or disprove certain hypotheses, but to open up the horizons of thought and potentials in the field of music education. The focus was always on discovering the heart of learning problems and creating alternative ways of solving them. The curriculum products prepared by MMCP represent major alternatives to the status quo.

There has been little attempt to amass statistical data to support conclusions the project has reached. The observations and judgments of the many highly qualified and creative musician-educators who participated in this work were considered sufficient grounds for continued exploration and development. The observations and conclusions stated here must be read in this light. It is highly recommended that formal research studies be designed to deal with the many ideas developed in this study and presented in this report.

The scope and the manner of operation of this project have provided a broad range of insights into music education today. Through the hundreds of musician-educators who have been involved in either the creative work of curriculum building or in workshops, the project has been in touch with the things that happen in the classroom. In its unique investigative approach it has encountered and explored a wide variety of problems and created a number of alternative solutions. From these experiences many conclusions have been drawn. Some of the conclusions underly the curriculum products of the project, particularly the Synthesis and the Early Childhood curriculum. But many of the experiences of this project have led to conclusions which have implications beyond the immediate curriculum products. These are listed under five headings: The Student; Teachers and Teaching; The MMCP Curriculum; The School and Innovation; and Music Education and Society.

The Student

This project began with a completely open mind about the student's potential for accomplishment in music. It was felt that there was little if any reliable information about who could achieve or what could and would be learned if the processes for learning were changed. The work of the past four years has more than substantiated this belief, but it has not provided specific answers to the questions of who and what. The reasons for this are largely the limited time of exposure of the students to the new curriculum and the creative and exploratory character of the project. However, there are many interesting observations that can be made about the student in the music lab.

Student Involvement. In the operation of music laboratories as described in the Synthesis, there were very few non-involved students. (Those students characterized as being involved cooperated in all lab activities, voluntarily participated in class discussions, and completed all outside assignments.) A majority of the MMCP teachers reported all students were involved. This included junior high school classes as well as those in elementary and high schools.

There was practically no way to predict who would be successful (in his own terms) and become very intensely immersed in the musical activities of the lab. The students' previous attitudes toward and experience in music seemed to have little relationship to their level of participation in the music lab. In a number of instances, teachers reported that instruments, previously studied and dropped, were voluntarily taken from the attic and conscientiously practiced to meet the demands of personal creative efforts. Many students who had a history of rejecting the music class made a complete about turn when they discovered that the conditions and goals of the lab were significant to them. On the other hand, there were students who had experienced some personal achievement in private lessons, particularly on piano, who tended to restrict their exploration to those musical ideas they had encountered in their private study.

Interestingly, neither existing musical aptitude tests, I.Q. results, nor previously exhibited creative behavior were believed by the teachers to be reliable in predicting results. For example, in fourth and fifth grade classes where students had been previously selected for instrumental study on the basis of the Gordon, Seashore or other tests of musical aptitudes, these same students were not judged to be more successful in the music lab than students who had had lower aptitude scores. In addition, singing ability or interests appeared to have little relationship to the development and use of creative musical thought.

There were, of course, great differences in the musical achievements of the students. But the reasons for these differences did not appear to be linked to traditionally accepted criteria. While there must have been intrinsic reasons which, unfortunately, remained unidentified, the social relationships of the lab itself (including the teacher's interaction with students) were the most obvious reasons for variance in student success. In high school programs, where opportunities were made available to the students, the musical judgments and concepts gained in music labs were carried into bands, orchestras, and other performing groups. The students demonstrated a strong desire to have an active role in conducting and making musical decisions. They also wished to compose and arrange music for their school music organizations. Unfortunately, such opportunities were not always available to the students because of traditional attitudes about the students' and director's roles in performing groups.

Cumulative Learning. There was considerable evidence in the lab that learning was cumulative and musical growth exceeded previous presumptions of the students' potential. In upper elementary and junior high school classes many students, in their second year of MMCP lab experience, were involved with strategies on a concept level of cycles 8, 9, and 10. The students' retention of information was continually demonstrated by the manner in which they used it. In this type of learning experience there was little chance that students would discard knowledge, since information was not acquired for single test results. The sophisticated musical use of concepts often amazed the teachers and indicated a level of understanding which the teacher would not normally have introduced into the classroom.

Group Interaction. A large percentage of the teachers who were involved in the project judged that the small group activities had significant educational effects. Particularly at the elementary and junior high levels, the nature of lab operation required that four or five students work together in compositional strategies. The results of this cooperative involvement were both social and musical. First, the student interaction in these groups produced very positive learning outcomes. The students taught each other the things that they knew; they opened for each other alternative perspectives which might otherwise never have been uncovered; and they challenged each other to think analytically, judicially and creatively.

Second, the way in which the groups functioned provided a unique educational experience for the students. Although there were many group activities in the general school life, few of these necessitated the kind of cooperation and focus on a single product that was necessary in the lab. In this experience the children learned how to give and take, how to cooperate and influence, without sacrificing personal pride in the group accomplishment. They gained a sensitivity in human interaction.

Hearing Music. While there were no stated objectives which suggested that students should "appreciate" certain pieces of music, there was considerable evidence that students were hearing music in an entirely different way. Even at third and fourth grade levels they initiated discussions about music which they were using as reference material and about music they heard outside of school. To some, these conversations might have seemed to be irreverent because the students often tended to be critical. Their thoughts about music were within their own framework of understanding. "This was boring because the timbre never changed." "That piece could sure use some changes in dynamics, or another instrument, or a different tempo." But they talked about music as musicians because they cared to think as musicians.

The Lab and Skills. Through the music lab it was possible to gain some unique insights into the field of skills in music. Much of the awareness that was gained stemmed from the delineation of concepts and skills as explained in the Synthesis, and the categorization of skills into three areas, aural, dextrous and translative.

Undoubtedly the biggest single problem which plagued the music lab was dextrous skills. In the understanding of musical concepts, in inductive, deductive and intuitive reasoning, there were few road blocks that arose. Students demonstrated a capacity and thirst for understanding that had enormous implications for the future role of music in society. In the actual performance of music, however, great problems were encountered. The students' own sound production did not satisfy their own musical tastes and anticipation. The sounds of the drum or the clarinet, sax or trumpet that were produced by fellow students were often discouraging. The sounds didn't match the students' concept of musical quality in the realization of their own musical creative thoughts.

This frustration had both fortunate and unfortunate outcomes. There were some extremely strained moments in a number of labs when a performer did not live up to expectations. On the other hand, students soon learned the technical limitations of fellow performers, and in their composing compensated for the performance inadequacies. Tommy might be given two notes on the trumpet, both very loud, while Nancy's part on the flute was delicate and technically demanding. The major outcome, however, was an intrinsic motivation to gain better dextrous skills. As mentioned previously, many students went back to instruments that were abandoned two or three years earlier. They worked very seriously to fulfill the performance requirements of the lab, but interestingly, did not wish to apply their new skills to participation in the formal school music groups. For students who were already playing in bands or orchestras, the lab seemed to present a new challenge. As with the other students there appeared to be a fresh motivation which had a considerable effect on an increase in skills.

Aural skills were an entirely different matter. At the outset of the project there arose the serious question about what students heard. The activities of the class made it obvious that they were hearing and responding by making choices, but the things that they heard did not necessarily coincide with the things the teacher heard or wished the students to hear.

It soon became apparent that there was a choice to be made: either the class could grow from the areas of aural sensitivity of the student, or the student could be programmed to hear what the teacher heard. It was a simple decision and the curriculum leaned very heavily on students' sensitivity to timbre rather than on pitch, especially at the early stages. The effect of this was felt in all areas of aural sensitivity. Memory increased appreciably, many students could remember the smallest details of their group compositions which were up to three or four minutes in duration. Sensitivity to the characterictics of sound became very acute. A composition for the cymbal composed by a fifth grader had 15 different sounds from that one instrument. Out of this total sensitivity, pitch recognition seemed to be almost natural. There was little need for special pitch exercises removed from a musical setting.

From the information gained in this project on the students' perspectives and natural sensitivity to music, it was apparent that the curriculum could not be preoccupied with pitch recognition and production, especially at the early stages. The majority of students did not hear pitch as the predominant factor, nor did they conceive of meaning in music simply in pitch terms. Since it was the totality of the sound (see Synthesis) which stimulated their imagination and concern for judgment, the total sound was the logical place at which exploration of musical concepts began.

By removing notation from the area of musical concepts and treating it as a translative skill, a great deal of information was gained about the problems of musical conceptualization. For example, a student would improvise on a tomtom, and create a very musical composition. Ideas of form were present. There was quite a subtle use of dynamics, and the rhythms were very sophisticated. Even timbral choices were evident in the way the hands touched the rim and various parts of the drum head. When the same student was asked to consider devised notation, especially before the aural ideas had been formulated, the musical quality of the composition demonstrated far less sensitivity and musical imagination. When the student was required to use formal notation, the composition was simply bang, rest, bang, rest, bang bang, rest, rest, rest, with no dynamics, no aural imagination, and little if any personal concern.

From this type of observation and many others, it was concluded that to teach music through notation was to follow the least efficient route possible. It could unquestionably be done, but the sacrifice of students and time, as apparent in so much of music education, was needless and tragic.

The introduction of elements of notation as they became necessary to fulfill or extend aural thought and to satisfy problems that grew from creative exploration proved most productive. The simple notational factors (from devised notation to f and p, and on to the staff and notes) were easily understood by the students because they were immediately related to an aural experience which was of direct concern. This system which emphasized aural planning with notation treated as an adjunct was carried throughout the program. Through this process of introducing symbols to reinforce musical cognition, few notational problems were encountered. In fact, notational skills grew with remarkably little attention from the teacher.

Self-Confidence. The experimentation at all grade levels in the schools yielded some interesting information about the student's reaction to a school condition which allowed personal judgment. For many students at all levels, but particularly above the elementary school, this was a difficult experience in the beginning. The habits of accepting external judgments about one's own thoughts and production were so ingrained, that the freedom of the lab was somewhat threatening. The students had little self-confidence within the school environment and often waited for teachers' pronouncements before they took pride in their own ideas.

Fortunately, this situation was generally short-lived and the students began to assume responsibility for their own learning. Probably the most important outcomes of this were increased personal motivation and the development of capabilities in self-assessment.

It was the conclusion of all of the teachers who worked on this project that the lab experience should begin as early as possible and be carried through the entire educational program.

Teachers and Teaching

Problems of Adjustment. The music lab may have been an exciting and productive place for students, but for teachers, especially in their first few weeks of contact, it has often proved to be more akin to a nightmare. On a very personal basis, the teacher had to alter his total style of interaction with the student. The teacher could not dominate the classroom scene. Often no one really needed him for a whole period. Teachers generally found it extremely difficult not to intrude on the students' own exploration. The teachers also had to readapt their focus of alertness from the immediate identification of discipline problems to an awareness of enthusiasm and personal concern. This was not easy since the normal style of classroom operations could be characterized as defensive.

In the area of planning, teachers often felt frustrated since no amount of planning was ever sufficient. Most of the time every student was working on his own kind of problems and, regardless of the fact that the strategy was the same, the problems were all different. Often teachers planned extensively for resource materials which no student needed at that time, while the questions the students had were not planned for. Similarly, many teachers found the type, extent, and quantity of musical questions that arose to be overwhelming. The nature of the students' inquiries required that the teacher consider and deal with musical concepts on a real life level rather than a scholarly plane. Many teachers found that there was a long gap between the identification of ABA form on a selected recording and musically complex considerations of form in terms of balance, shape and unity in a student composition. Knowing the families of the orchestra was of little help when fourth graders were working on the transposition of parts for their composition for recorder, French horn, baritone horn and orchestra bells.

While almost all of the teachers who served in the creative development of the MMCP curriculum and many teachers from workshops and in-service programs were able to meet the personal and musical demands of the lab, there were others who were incapable of the personal adjustment and musical study that was demanded. In fact, the most serious drawback that this project faced was that a large number of music educators who tried the MMCP style of operation did not have the necessary background to cope with the extent of the students' musical exploration even at the elementary school level. Some teachers found that even the intensive workshops and in-service programs were inadequate to dispel their feelings of personal insecurity and to equip them musically to face the new educational demands of the lab.

Problems of Perspective. There was another problem that the project faced in influencing change. The curricula developed by the MMCP presented alternatives in every area of musical and educational thought. These alternatives grew from a defined philosophical position regarding music and from an awareness of educational thought and cognitive science today. Since the ideas governing these curricula were grounded in the logic of education and a specified perspective of music, all of the goals and activities were substantiated within this reasoning.

Unfortunately, an astonishing percentage of music educators, including teachers of music from the primary vocal class to graduate study in applied music, had never encountered in their own education or teaching life a situation which required them to justify education and the logic of its goals or processes. In their day to day operations they were ruled by a particular methodology and those habits of expectation which had grown out of the methodology. Their sense of security and feelings of personal pride had become glued to their methods and habits, and the methods had become so dominant that the reasons for the methods no longer were important.

The result was a condition of educational stagnation which was so widespread that it was self-perpetuating. The cycle which leads from learning to learning to teach and then to teaching was so tightly contained, regardless of the grade level or area of the country, that it had been extraordinarily effective in blocking attempts to revitalize or update the educational domain. For example, few of the hundreds of college teachers who became associated with the MMCP had heard of the term "process" in learning, or had any thoughts about the significance of the way learning takes place. Consequently, it was unlikely that their students would consider the nature of the learning experience in their own teaching, and so on. All of this, in spite of the fact that substantial information on the learning process had been all around them for at least the past fifteen years and could have had a profound effect on the progress of their own students.

A great deal of this situation, which could be termed the tragedy of education, was probably attributable to two things: the teaching of methodologies rather than logical reasoning, and the total lack of humanistic goals at every level of learning. The student as a human being had seldom been considered as the product of education. Therefore, education had not been challenged to reconsider its goals, substance and processes in terms of the needs, growth, or intrinsic nature of the individual. It had rather relied on goals of skill proficiencies and data acquisition that often suppressed creative thought and personal reasoning.

As far as MMCP was concerned, this situation was most difficult. First, for the educator whose personal security and dignity were based on his methodology, the introduction of any new ideas proved to be a frightening occurrence. The curricular concepts of MMCP were doubly threatening because there was no methodology, just a basis for reasoning about educational action. There was no possibility of substituting one method for another. Personal security could not be transferred from one manufactured structure to a new formula, it could only come from personal logic and one's own excitement in finding purpose and meaning.

Second, the entire MMCP rationale for music education was totally foreign to many teachers' way of thinking. Since these educators had little occasion for considering the efficacy of their own teaching, they did not have the flexibility of perspective to grasp the reason or significance of any alternatives in purpose, content or process offered by MMCP. There simply was no line of communication available.

Potential Solutions. With the cooperation of aligned school districts and many colleges and universities two types of experimental action were undertaken to stimulate those attitudes and conditions which would permit communication. The first involved the workshop and in-service programs. These were based on the idea of separation and immersion. The teachers left their daily responsibilities and were immediately and continually faced with fresh experiences which were different from their own routines and thought patterns. In order to survive in these programs they had to move out of their accustomed way of considering music and education and look for new answers. The vast majority of teachers did in fact survive and found that the experience made a considerable difference in their own lives.

The second avenue was the college curriculum study. Since the teachers involved with this study could not step aside from the immediate responsibilities of their day to day school life, an attempt was made to introduce a different perspective of that life. The results of that experiment were not known because the experiment was not concluded. The immediate reaction was quite mixed, however. A considerable number of college teachers resented (some with passion) the intrusion of new perspectives or new criteria into their domain. A high level of resistance existed in many faculties extending even to the preparation of questions regarding the efficacy of the existing situation. On the other hand, many of the teachers displayed an enormous concern, and purposefully set out to find answers to challenging questions they themselves developed.

It was concluded from the extensive project experience with retraining programs, that music education could indeed be refocused and come alive. The key to this will be individual teachers who shuck the straitjacket of methodologies and venture into musical, philosophical and educational reasoning. The best means for assisting teachers to achieve this are experiential programs which challenge broader perspectives and provide real-life practice in judgment making.

Classroom Teachers. One of the interesting conclusions reached by this project concerned the work of the classroom teacher in music lab. In many schools, classroom teachers became involved with the creative musical program of the students. In elementary grades this was largely voluntary. It arose from the teachers' particular interests in the students' work and their desire to be involved. A number of teachers arranged time and space for lab groups to work on their compositional strategies during non-music periods of the school day. Others had students perform during their class. Occasionally teachers participated with the students and were of considerable assistance to the music teacher. It was noted that some classroom teachers who became interested in the lab, varied their styles of operation in their own classrooms.

At the primary level much of the music lab investigation was carried out through classroom teachers. A considerable number of these teachers had very limited previous experience in music. For most, the customary primary song was the extent of their involvement. Obviously, music activities in their classrooms had been somewhat confined.

With the benefit of prior workshops and continuous help during the school year, these classroom teachers more than fulfilled the project's expectations. Not only were they exceptionally effective in assisting children in explorations and discoveries in music, their own musicianship and interest also grew through their classroom experience.

It was concluded that at the primary level the ideal teacher of the music lab was the classroom teacher. With prior training and frequent assistance from a skilled musician-educator, the classroom teacher was entirely capable of achieving extraordinary results. There were many reasons for this.

1. The primary teacher knew and understood the children and was extremely sensitive to how music could help them. Consequently, the lab became more than a music class. It was a time when children learned to communicate and interact through music.

2. Music became a part of the whole school life. There was no established period when music had to occur, and there was no time when it could not occur. The result was that music was a very important part of the class day, everyday. Often the music lab took up the best part of a day.

3. The unprecedented amount of music was possible since music was a part of many other subject experiences. Pieces were composed about stories that were read, about counting and adding, about gerbils and fish, and about spelling and punctuations. Music was not a confined area. It was part of the total learning experience.

The conclusion that the classroom teacher was the ideal teacher for the lab at the primary level did not hold true for the classes above the second grade. While some classroom teachers were indeed effective at higher grade levels, it was a rare occurrence. Usually the teachers were not able to cope with the extent of the student's musical inquiry.

The MMCP Curriculum

The principal educational ideas developed by this project were structured into two educational programs, the Synthesis and the Early Childhood Curriculum. As previously discussed in this report, both of these curricula evolved out of intense classroom experimentation and experience. This was followed by pilot study in a wide variety of circumstances, and many revisions of the curricula. In three years, for example, the Synthesis was revised four times on the basis of new insights and new evidence of student capabilities.

In spite of the fact that the final revisions of these curricular materials were made at the time of this report, these materials were, in a sense, obsolete at the time of the report. Many of the musician-educators who contributed to the development of these curricula had already moved beyond the limits of the ideas presented in these educational plans. The momentum for creative development they gained in the process of this project carried them past the extent of the structural considerations of these curricula.

The nature of the MMCP curriculum mandated its own obsolescence. In the exploratory atmosphere of the music lab the challenge was always on discovery. When the atmosphere was a sincere one, the teacher as well as the students were involved in the discovery process. From each discovery, whether it was about music, the students, the process, the learning environment, or oneself, new insights, new lines of inquiry, and new areas of sensitivity emerged. From these discoveries the first steps past the written documents were taken, then the second steps, then the third.

It was the conclusion of all those who participated in this project that written curriculums such as the Synthesis and Early Childhood Program had no viability. They were the results of past thought, not formulae for the future. While they could temporarily serve others as a basis for developing broader perspectives of music and education and initiating personal constructive action, they could also become just other methodologies if the educator did not grow past the boundaries of thought contained on the page.

The advances made by MMCP in developing fresh thought about teaching and learning in music were only first steps. The rationales, processes and structures suggested by the Synthesis were far from complete. For example, the spiral curriculum could be extended to cover all areas of musical thought and practice. The present limit of sixteen cycles was not intended to imply any limitations of this structure. The premise of the Early Childhood Program that the process of involvement was the objective, was simply an introduction to a learning principle which had unlimited implications for the future development of learning programs in the field of music.

Feasibility Studies. The depth of investigation in two of the feasibility studies, the Science-Music Program and the Instrumental Program, was very limited, but the insights gained were significant. In the Science-Music study all of the teachers, music, science, and classroom, who participated emphasized that after the first few classes there were no separate science or music areas. The concepts of the individual disciplines merged so naturally that a complete integration happened without conscious effort. The students frequently branched off into pertinent explorations that tended to be more in one field than another, but the underlying unity of subject matter never was weakened. The question of the further dissolution of discipline barriers was raised by both the teachers and the students, not on the old basis of manufactured relationships which had little relevance to either child or disciplines, but on operational levels grounded in real and simulated life experience. It was concluded that the experience of the Science-Music study opened an exciting opportunity for the consideration of subject matter which the participating teachers intended to pursue on their own.

Another feasibility study, the Instrumental Program, produced very mixed and far less conclusive results. One reason for this was that the teachers involved found it extremely difficult to divorce themselves from their ingrained habits of verbal reference, teaching process, and expectations of sequence in student growth. In the teaching of the kinesthetic skills, it appeared that methods were so dominant that the method and goal were inseparable for many teachers. The necessity of using the tape loops as aural models rather than lesson books for visual stimulus also presented some difficulty. In some cases this was a problem of equipment or space; in others the problem was mechanical know-how. In spite of this, a good deal of progress was made. In the growth of aural discrimination, tone control, and fingering techniques student progress was encouraging.

The major conclusion was that the experiment needed a more adequate trial. Participating teachers should have had more prior training, more continued assistance, and more opportunities for interaction with other experimenters. The results, while spotty, indicated that there was a great deal to be learned in this area of educational experience.

The third feasibility study, the Electronic Keyboard Lab, was conducted over a six-month period. The circumstances of this study allowed for a much more intensive level of investigation and development than was possible in the two other studies. For example, project personnel were able to visit the experimental classroom at least once a week and consult with the teacher on even more frequent occasions.

Conclusions about the potential of this creative and exploratory program were influenced by many sources. The teacher involved was a pianist who had considerable experience in traditional class piano methods. She believed that this study benefited the students in areas of musical attitudes, conceptual growth, and skill achievement far beyond anything in her previous experience. Other observers including music educators, classroom teachers and administrators echoed her opinions based on their own experience.

The students also influenced the conclusions. In an attitudinal assessment conducted within the project, students in the feasibility study responded quite differently from students in other electronic keyboard classes. The students in the lab expressed a primary interest in discovering musical ideas, creating and improvising, and in solving musical problems. The expressed interest of students in non-lab classes was learning to play, playing a tonic chord, and learning a certain piece.

The conclusion of MMCP was that this study could well serve as a transition from the Early Childhood to the Synthesis curricula. The notational and dextrous skills developed in the Electronic Keyboard Lab by the third grade level could facilitate far more intensive involvement in the strategies of the spiral curriculum. The concepts which students developed could also enhance further experience. It was also concluded that this program, while admittedly a limited musical experience in many respects, had independent value when other MMCP curriculum opportunities were not available.

Finally it was concluded that this experimental curriculum deserved a wide and intensive field study. Only the limitations of time in the project prohibited such a study within the field centers.

The School and Innovation

Since the classroom was the center of attention of this project, the MMCP had working relationships with many schools at all learning levels. These contacts provided a unique opportunity to understand the operations and characteristics of schools and school districts. The conclusions stated here were those which were drawn from MMCP operations in many schools.

Much of the success of this project was directly attributable to the cooperation of the school administrators in experimental stations and field centers. Whether it was a hands off policy regarding the innovative classrooms or more concrete assistance with the many problems which arose, the positive attitudes of the many schools toward the work of the project bore significantly on the extent of curriculum investigation and development that was achieved.

With a budget that was only a fraction of that of many curriculum development projects in other fields, the project relied heavily on this cooperation. Where special equipment or educational materials were needed to accommodate experimental work, the schools were very responsive. In field centers the majority of the school districts assisted in developing in-service programs by providing time, in-school credit, and in a number of instances, funds to support the training programs. With few exceptions, MMCP teachers were allowed the necessary time to attend project meetings and special conferences that bore on their work in curriculum investigation. In a number of cases, schools went to considerable effort to assist the project. One elementary school revised its schedule for the entire school to allow for a pilot study of the ABC scheduling procedures. In other districts, divisions of instruction worked with the projects in developing assessment plans for the MMCP work in their own schools. As an outgrowth of their participation, a number of schools rewrote their own music curricula based on project developments; and in some schools, new music rooms were designed to facilitate music lab activities.

From the experiences with these schools it was concluded that education can indeed be revitalized through the grassroots approach. The thirst for participation in innovative programs displayed by school districts throughout the country was an eye opener. There was an obvious concern for improving the quality of education and a genuine desire to be a partner in creating better educational circumstances. A major difficulty that schools had was in finding significant innovative opportunities. Few educational projects allowed the type of individual school input and creative investigation required by this project. In too many instances, curriculum was designed by experts and made available for interpretation or misinterpretation by the schools. The fact that MMCP depended on the creative enthusiasm and cooperation of the individual schools in all aspects of the project was of special significance to the educators in these schools.

The project experience with schools indicated that constructive desire did not necessarily imply creative leadership. Few schools, because of the structure and complexity of the entire educational operation, had the internal means for developing meaningful areas of inquiry about their learning programs. There was little internal direction for analytical or philosophical thought dealing with new potentials for education or areas of possible innovation. Unfortunately, there was also little help from the outside. Few state education departments had contributed leadership in constructive educational thinking, professional educational organizations were not conceived to serve that function, and the colleges were many years behind the schools. Consequently, innovative energies had been largely focused on educational mechanics which had aroused local controversy but had little effect on either teaching or learning. The swing to modular scheduling and the recent emphasis on preparing behavioral objectives, were typical examples of misguided desire. Both were innovative efforts that were certainly well intentioned, but they did not arise from identified problems of the learning conditions. In most instances neither modular scheduling nor the writing of behavioral objectives had any influence on what was taught or how it was learned. The sum effect of these innovations, as far as the quality of learning was concerned, was no change. While both of these ideas had positive potential in facilitating educational change, they were employed as the ends rather than the means. The mechanics of scheduling and planning became more important than the reasons for decisions about time and substance.

The response of the schools to the work of MMCP was indicative of progress that can be made through a partnership effort. The future of educational development could well be served by programs which emphasize this type of partnership.

Music Education and Society

Music education has long stood in the shadows of the scholar, performer, concert hall, and every other conceivable facet of the business of professional music. Too often it has been regarded as a conditioning routine to prepare the masses to serve the professional status quo. It has been focused toward filling concert halls, developing respectful and appreciative followers, and socially and culturally maintaining established musical conditions and hierarchies.

The role of music in the total educational environment has been equally innocuous and inconsequential. Generally relegated to "special" status, music has been juggled into the school week for many reasons, none of which appeared to have much to do with the child or music. School public relations, curriculum habits and even coffee breaks for classroom teachers have often been major factors in determining what, when, and how music was taught.

The music lab introduced an alternative for music education. But in the alternative the reasons for learning and involvement were different. Neither the cultural establishment nor the pragmatic exigencies of the schools were given a second thought. The ultimate purpose was people not things. The goals of the music lab were personal development, personal perspective and personal sensitivity and fulfillment through and in music. One outcome may be larger audiences. Current values may be continued; but the lab did not exist to program people to these outcomes.

The course of music education could well influence the future of music in society. Should it focus on creating conditions which allow for personal judgment and creative thought, it could lead the emergence of a new cultural era. Should it continue to pursue its supportive and subservient roles, it could lead to a further alienation between society and the arts.

Recommendations

In the conclusions many recommendations for future action were stated or implied. Briefly the major recommendations include:

1. The college experience of people going into music education demands immediate attention. In all areas dealing with musical thought and educational perspective there is urgent need for radical change. The most effective procedure possible will be the development of alternative models which will challenge current closures.

2. Creative research is desperately needed in areas of musical skills. The processes for the development of aural, dextrous and notational skills are antiquated and inhibiting. The development of efficient teaching techniques and new technological instruments to assist in the acquisition of basic skills could have unlimited results.

   It is recommended that extensive research be undertaken to analyze the problems of skill development. New knowledge of myology, psychology, learning theory and technology must be considered in the creation of efficient programs dealing with skills.

   It is not recommended, however, that technological equipment and programmed instruction be applied in cognitive areas. The practice of aural judgment and creative thought are basic behaviors of a musician. Programmed instruction in theory, for example, may produce high scores on tests dealing with data retention, but data retention by itself is not a musical behavior and is hardly a substitute for aural logic.

3. It is strongly recommended that individual research, particularly that research related to advanced degree study, be steered toward investigations of the learning results of the MMCP curricula. It was not the purpose or nature of this project to pursue statistical research systems. The project, geared toward creative development of philosophical reasoning and processes for education in music could not engage in the established mechanics of the traditional researcher. To do so would have stifled the creative purpose of the project. However, it would be extremely desirable at this time to seek verification of the project's conclusions through intensive research.

4. As implied in the conclusions, one of the most important resources that could be employed in educational development is the conscience and desire of public school educators. It is recommended that

programs be instituted which would provide direction for positive action by the educators of the local schools. These must be leadership programs which focus attention on significant problems to be resolved, not external programs which present the schools with prepared answers to be accepted.

5. In the chapter on objectives in the Synthesis, areas of musical behavior have been identified and discussed. In this there is a basis for differentiating between the business of music and the art of music. It is strongly urged that conferences of educators, including school administrators and school musicians, be called to review this chapter and similar writings. The purpose of such conferences should be to establish guidelines for the development of objectives for music education which would reinforce the many musician-educators who are attempting to upgrade their programs. Such meetings should be set up in such a way that recommendations would be forthcoming that would also spell out alternative possibilities for the mechanics of operation in achieving the new objectives.

6. All three of the feasibility studies showed great promise. The Instrumental Program not only worked, it assisted students to behaviors that were unique for that stage of development. The Keyboard Study obviously opened minds to music where many early keyboard studies closed minds by focusing attention on mechanical rather than on musical considerations. The work of the students in the Science-Music Program demonstrated that the integration of subject matter on a life or operational basis could be extremely effective.

The project offers the results of these experimental programs to others who would pursue the development of these ideas.

APPENDIX A

MMCP

SYNTHESIS - 1970

A Structure for Music Education

Ronald Thomas

PREFACE

Have you ever considered

... that if all of the works and theory from 1780 to 1880 were suddenly lost to the world, music would still exist.

... that the purpose of education is to open minds and to provide the substance and enthusiasm for continued personal discovery and growth.

... that notation is only a coding device, a storage and retrieval thing. It's a system for translating musical ideas for future recall, not for acquiring or developing musical sensitivity or sensibility.

... that electronic music is here to stay. It is not even really avant garde, since its greatest proponent has already died of old age.

... that methodologies are just substitutes for personal logic: the music educators' and the students'.

... that a composition is merely a statement of someone's musical thoughts, and everyone has musical thoughts.

... that every significant musician throughout history has searched for new musical expressive possibilities. None has been content to merely duplicate the systems and idiomatic practices of his predecessors.

... that most students never have the chance to exercise musical judgment in the classroom.

... that Webern is no longer contemporary - in fact he's an historical landmark - music is either pre- or post-Webern.

... that a guitar amplifier is a great device for investigating and inventing exciting sounds.

... that the classical and romantic periods reflect the upper class European culture during a 100-year period -- 100 years ago.

... that pitch discrimination is not necessarily related to pitch production.

... how a 5th grader must conceive of music after 5 years in the classroom.

... what an 8th grader thinks of music after 8 years of general music.

... that the gulf between the educational system and the living creative art of music has grown so huge, that a really knowledgeable student may have to choose sides, and he may be intimidated to reject the art.

... that Bruner could have written "The Process of Education" just about music.

... that in improvisation a musician employs instant musical judgments.

... that the logic of discovery is far more exciting than the logic of the discovered.

... that the strongest bond between the musical art and the student is a sensitivity to contemporary life.

... that the teacher who dominates and controls the students shrinks their perceptive potential.

... that there are three categories of skills related to music - dexterous, translative, and aural - but none of these necessarily infer or produce musical attitudes, cognition, or aesthetic judgment.

... that popular music lets people act like musicians not like statisticians, computers, abstract designers, mechanics, or finely honed tools to be manipulated. "I can be, think, create, evaluate, reject, sense, interpret, control, express, invent, reason, feel, have power to fashion. It lets me be someone."

... that music is a viable art and "treasured works" are but isolated moments in a vast history that is still being made today.

... that young students, whose minds haven't been closed by the educational system, don't think Berio or Stockhausen are unmusical and peculiar.

... that timbre is the medium of music.

... that there are two types of concepts in music - inherent and idiomatic.

... that discovery may be guided but never dictated and creativity cannot be inflicted on students.

... that the meaning of music is in the interaction, not the fragmentation, of musical elements and factors.

... that educators hold three totally opposing views about music, the curatorial view, the social and functional view, and the view of music as a continuing art and a way of knowing.

... that music is sound - not symbols, diagrams, formulae, idiomatic practices, or skills.

TO

Herbert Alper, Harold Arberg, Walter Barnum, Richard Bartlett, Americole Biasini, George Blaha, Paul Boepple, Judith Bregman, Henry Brant, Alex Campbell, Harold Carle, Josephine Caruso,

Robert Choate, Frank D'Andrea, Ronald Davis, Julie Diamond, Peter Dirr, Renee Fisher, Dolores Francis, Robert Gibbs, Edwin Gordon, Berj Harootunian, Stanley Haynes, Arthur Hornberger,

Dwayne Huebner, Barbara Hurley, Bruce Joyce, George Kyme, Paul Lehman, Otto Luening, Sister Elizabeth McCormack, Marie McGuckin, Florence McKenzie, John McManus, Fred Mendelsohn,

Lindsey Merrill, Joanne Moore, Sister Josephine Morgan, Eddie Lou Neel, Richard Neubert, Harald Normann, Lionel Nowak, Sister Eleanor O'Byrne, Ruth Parson, Lenore Pogonowski,

Barbara Reeder, Alfred Renino, Robert Revicki, Carroll Rinehart, Thelma Rockwell, Emily Romney, Paul Roff, Sister Virginia Saalfeld, Sister Ruth Sheehan, Billy Taylor, James Tenney, Robert Thayer,

Sister Mary Joseph Umiejewski, Charles Weiss, Natalie Wiegel, Charles Wuorinen,

and to

School administrators in school districts of field centers, experimental stations and colleges who have cooperated in furthering MMCP experimentation and development.

Thank you

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Titles suggest that the school subjects have arisen from a discipline that has a substantial nature. In a good many cases our attempts to translate the discipline into a viable subject matter that can be learned in school are a mistranslation in the sense that the learning method that we have developed has taken the place of the discipline. We have become subject-centered, in fact, the subject is no longer relevant to the discipline....It fails properly to represent the discipline out of which it came.

We have taught prosody in the name of poetry, thereby killing an interest in poetry for ourselves and our descendants. We have taught grammar in the name of composition, destroying the possibility of a widespread ability to write good essays or even good expository prose. We have taught computation in the name of math....The trouble is the youngsters can do it, but they don't understand it. We have taught phonics in the name of reading....place geography in the name of geography....dates and battles in the name of history....facts and principles in the name of science: but science is a mode of inquiry.

Arthur Foshay

Music is a medium which serves man as a basis for perceptual exploration free of the constraints of verbal definition, singular causes and effects, and preordained structural assumptions. Therefore, is it not absurd to regard music as a technological study dealing with systems and outcomes within established perceptual patterns or, as McLuhan says, "... laid out in certain 'fields' packaged in varying degrees of processing or predigestion"?

INTRODUCTION

In even a casual observation of music education programs there is one point which is both obvious and perplexing. This concerns the vast differences in student response to music classes at the early grade levels and music instruction in the high school. In the primary and elementary grades, student enthusiasm is boundless. The youngsters look forward to the music class and are anxious to participate in the educational activities devised for them. An announcement will often bring the majority of the students to tryouts for choral groups, and those who are not selected are genuinely disappointed. Rarely does a student resist becoming involved in those musical opportunities made available to him.

As his education progresses it could be assumed that this seemingly rewarding early experience, an expanding frame of reference, and increased skills and abilities should assure continued enthusiasm for participation. The opposite, however, is true. By the junior high school level music classes are often problem classes. Where music is required there is often resentment. Where it is elected only a fraction of the formerly enthusiastic students will voluntarily register. It would appear that music as a subject matter of intrinsic significance is frequently rejected by the student, and schemes employing extrinsic motivational factors are often considered necessary.

At the high school level this student

attitude of disinterest becomes even more evident. Only a small percentage of the students elect music, and the classes are mainly large performance groups. Most often in these large performance organizations the course content does not represent either the historical qualities of music or the viable art of today. The substance of these classes is often only remotely related to music as an art or a cultural force. Materials of instruction have largely been manufactured to satisfy pragmatic demands and plebeian tastes. Very few students in high schools are involved in classes which are singularly conceived to deal with the concepts of music as an art and a significant area of knowledge and experience.

What is the cause for the apparent progressive rejection of music education opportunities? Why does increased exposure apparently go hand in hand with increased resistance to music education practices? There are two significant clues which may afford some insight into the problem.

First, the period when rejection of the study appears to begin coincides with the time of intellectual development described by Piaget and others of the Geneva School as the stage of formal operations. In this period, commencing some time between the ages of ten and fourteen, the child's sense of reason, intellectual projection, and logical operation become significant factors in his learning. Where in earlier stages of intellectual development concrete operations were easily followed by the student, in this latter stage considerations of logic, variables, and relationships become important to him. Indeed, the student's acceptance or rejection of any discipline will often be contingent on the logic and reason he finds in the subject matter.

Second, signs of rejection are almost exclusively limited to those areas of the art which have been involved with the educational program. Interestingly, there appears to be a converse relationship between disinterest in the school music program and participation in some type of musical activity outside the school. Many students who have little interest in music classes will become involved in folk singing. Others will devote many hours to the guitar or some other "popular" instrument. Often this is an intuitive and individual effort. While listening classes are seldom elected in school, record players and transistor radios have become adolescent necessities.

Perhaps the cause is simply that at the time of reason many students find that "music education" is irrelevant. In this most uniquely expressive art form, the student is denied the experience of creation and is limited to a functional role in the re-creation of, at best, historical monuments. He seldom has the opportunity to use music for his own expressive needs, while he is expected to appreciate the expressive works of others. He is refused the role of evaluator or critic because educational attitudes, geared to tradition and fixed positions, do not allow for student judgments. He is usually denied experience in a living art because this too often violates limited concepts of historical doctrines and idiomatic systems upon which educational methods are based. The student may deem the subject matter to be irrelevant, because it appears "completed" and foreign to the realities of life and society as he knows them to be.

In the development of curricular substance and processes, the MMCP has viewed relevance in three ways. The first problem was the identification and achievement of **artistic relevance** as implied in the quotation from Foshay. From the outset of curricular experimentation the authenticity of the educational experience, the consistency of the study with the nature of art, was considered to be of prime importance. To meet the criterion of artistic relevance, a position on the fundamental nature of music was formulated, and this rationale was used as a standard against which all subsequent curriculum decisions were weighed.

The second area of concern was that of

personal relevance. Here there were two questions that confronted the curriculum planners. How do students regard their own needs, and how must the learning program be designed to help them to satisfy these needs? What are the learning characteristics of students, and what processes for learning best utilize these characteristics? As work in the classroom progressed, it became obvious that a third question dealing with personal relevance was needed. Does the student find intrinsic meaning in his involvement? Does his satisfaction stem from his personal evaluation of the worth of his musical experience?

The third category of relevance dealt with the relationship of the educational experience to the social environment, the total milieu in which the student lives. This concern for social relevance in all learning experience does not diminish the significance of the history of the art. It rather demands that learning be in focus with the times; and all factors, whether historical or contemporary, be considered in phase with the realities of contemporary life. The curriculum must deal with music as it relates to the student's culture, his environment and the exigencies of life that shape his frame of reference.

The demand for social relevance has influenced the MMCP in yet another way. In curriculum development, it has forced an awareness of the nature of change and the unpredictability of the directions or uses of music in the years ahead. No one can say what values will be preserved or what the future manifestations of the art will be. This curriculum, therefore, reflects the concern that the learner remain sensitive to the viability of music in a changing society.

RATIONALE

The term "music education" is equivocal. While it has one meaning for the musician-educator, the term has a completely different connotation to the student. For the educator music education can be defined most simply. It is a series of exercises and experiences devised to assist the student to gain skills and knowledge and become involved in the art of music. To the student, however, the experiences of music education are most often interpreted as the "art". His perspective of music as a part of life derived from his participation in the educational opportunities made available to him in the classroom. His opinions, prejudices, interests and insights are largely shaped by the school experiences. The frame of reference with which he will judge the worth and quality of music is largely formed by his educational program.

Antecedent to all other curricular concerns, therefore, is a clearly defined position on the nature of music. Since the students' terms of understanding are the fundamental concern, all educational experience and the structure of the study must clearly reflect those basic qualities which give meaning, endurance, and importance to the art.

On the Art

Throughout history the sounds of music have been both persistent and diverse. For at least the past 6000 years, music in some form has been an integral part of cultures in all corners of the globe. In this historical and geographical span the sounds which comprise music and the structural ideas for combining these sounds have been extremely varied. The purposes and functions of music have also ranged widely extending from the purely social to the intellectual, and from the utilitarian to the most aesthetic.

While music has obviously had many identities in its history and in cultural societies throughout the world, the basic nature of music has remained quite constant. There are three fundamental characteristics which transcend the differences of specific styles, sound sources, or other idiomatic factors and give a meaning and coherence to the total art. It is through an understanding of these dominant characteristics that one gains a true perspective of the quality of music and its extraordinary value to man.

The first characteristic is that music is an agent for the projection and clarification of thought. It is a medium of expression which man has used not as a substitute for verbal or visual means, but because it serves a need for the transmission of thought that is not met by other communication processes. Through a distinctly unique and forceful language of sound, music conveys ideas and feelings in a way that is not matched by words or pictures. In this sense music becomes a way of knowing and experiencing. Thoughts are expressed, transmitted, received and clarified on an extremely personal and intimate level. This affects both the mind and the emotions. But it is in the indefinable ability of music to address the spirit of man that its greatest value as a communication process lies. From the "magical" uses of music in early Egypt through the influencing posture of music in western religious life, and from the action oriented driving rhythmical sounds of primitive Africa to the social inferences of the delicate Javanese gamelan, music has been a way of realizing and internalizing experience. Knowing has assumed a proportion that goes beyond just rational considerations. In fact, music has played a significant role in shaping those inner feelings on which rational thought is interpreted. As Mendelssohn has said, "the thoughts which are expressed to me by music....are not too indefinite to put into words, but on the contrary, too definite."

The second characteristic of music is found in its continuing nature. It has existed as a reflection of man's experience and intrinsic concerns for as long as our history records. It exists today not only as a curatorial interpretation of historical times and other societies, but as a contemporary, living, and vital expressive medium. Most important is the fact that music has always been sensitive to those contemporary conditions and social structures of the time of its creation. As society has changed so have the internal structures and expressive devices, but not the intrinsic nature of the art. It has evolved new sounds, new patterns, new modes, and new techniques of organization in order to meet the new tempi, structures, and pressures of life and society.

The plainsong was a most appropriate medium for expressive communication in the European culture of the eighth century, for the simplicity of the monophonic line, nonrigid time factors, consistency in style and lack of dramatic contrast were a direct interpretation of the essence of society at that time. For centuries the music of the tribes of Ghana remained constant with little perceptible change in basic sound or content. With the vast socio-economic revolution of the past fifteen years, the entire nature of the music has radically changed to meet the new pace and substance of living. From a lineage extending from the Baroque orchestra and contrapuntal forms of the sixteen hundreds through the orchestral sounds and musical concepts of the nineteenth century, to the electronic, complex and dissonant music of today one can trace the nature of man's sensitivity to a changing environment.

Music is a continuing art, always sensitive to and interpreting the present. It is neither a static medium nor a completed monument of the past. Aaron Copland describes it as, "...in a continual state of becoming."

The third characteristic of music is suggested by the first two, but relates music more explicitly to the intrinsic needs of man. Music is a vehicle for man in his constant search for individual creative fulfillment. Every significant musician through history has sought to extend the means of the art. He has not been content to merely duplicate the systems and idiomatic practices of his predecessors, but has found new means to meet the expressive demands he felt. Often this search, this exercising of creative drive and independent spirit, has produced radical changes in music. Ideas of dissonance and consonance have been contradicted, and structural practices have been discarded as new expressive forms have arisen. Sound sources, rhythmic formations, harmonic textures, and even the relationships of the basic elements have undergone many revolutions. The pace of this search for new means within the art has been commensurate with the pace of man's total creative evolution. Today this search is undoubtedly the primary concern of the art.

These three fundamental qualities, the expressiveness, the continuing and current nature, and the vitality of the creative search, are the most basic characteristics of music. They must be the most immediate responsibilities of the study, underlying every classroom experience and evident through every educational strategy. For without this depth of perspective the learning of data, skills, and techniques has limited purpose, and the full potential value of music to man is obscured.

On the Study

With the basic character and values of music clearly specified, several factors concerning the nature of the learning program become evident. Immediately obvious is the complexity of the demands that are placed on the curriculum. If the student is to grasp the nature of the art through his educational program, the study must be as concerned with the process of involvement as with substantive information. The student's activities in the classroom, what he does and how he does it, will largely shape his perspective of music. The mode of the study will influence his personal attitudes toward the significance of any future involvement.

It is imperative that a keen sensitivity to the nature of sounds, not only common orchestral and vocal sounds in a limited idiomatic context, but all potentially musical sounds be developed. The student must learn to "hear" in a way the composer hears and receive information in an aural form. He must also gain the ability to "think" in the medium of music; he must have a conceptual grasp of structural possibilities and understand the language of musical sounds. This capacity to think must not be on just a simple response level, it must encompass the total framework of critical thinking. It is essential that from the outset of learning the study involve the student in inductive, deductive and intuitive thought if music is to become a way of knowing.

Simultaneously, the study must provide for the growth of those skills which will permit the student to put his knowledge to use. The power to act, to operate as a musician, is essential not only for its own value in allowing personal participation, but as a functional asset in the development of understanding. The student must develop his capabilities to create, perform, conduct and be otherwise actively involved in the various musical processes if he is to fully grasp the medium. Without this personal active involvement the student becomes merely a musical spectator. While spectatorship may occasionally arouse interest, it is a most unreliable method of initiating and maintaining intrinsic concern.

In addition to the demand for breadth in variety of experience, the continuing nature of music demands use of a broad range of musical materials. Both the rich heritage and the contemporary vitality must be fused in the study in such a way that the student develops a clear and and unrestricted view of the timelessness of the art. This quality of the art, however, is not contingent on the timelessness of any one musical work. Any composition, or many compositions, are not the art, they are but moments in its history. Whether a piece is forgotten in time or continues in the repertoire, the art remains and continues to evolve. This perspective is best demonstrated in the field of literature where the works of Chaucer, Shakespeare, and Milton are not pretentiously positioned to exclude consideration of contemporary works of literature. They are known as significant moments in the lineage of literary achievement. Their values are recognized but their form and language are not imposed on the student of today in his creative exploration.

This necessity for breadth continues into the area of structural and manipulative techniques. To base the study, especially the earliest stages, predominantly on rules of melodic, harmonic, and rhythmic procedure which have not been used seriously by composers for at least six decades is to falsely represent the art. This forces the child to establish prejudicial judgments of right or wrong in music based solely on idiomatic practices. It is far more consistent with the art that the student's judgments be formed on the broadest principles of expressiveness, form, balance, and tension for which any idiomatic practice is but one composer's solution.

This requisite of breadth is stressed because two great dangers exist in the development of an effective learning program. The first is intellectual closure which occurs when the child's perspective is narrowed by restricted experience or an overemphasis on systematic procedures. Closure develops when the student's education narrows rather than broadens his intellectual curiosity -- when his insights are so confined he is unwilling or unable to make judgments of new experiences.

The second danger is that the means of learning may become the end. This is of particular concern in the area of performance. Because of the physical demands and pressures of time required to develop instrumental or vocal technique, dexterous accomplishments are often substituted for musical insight. This situation may exist not only in the second grade where mastery of pitch production may become the teacher's goal for the student, but also at other learning levels where muscle training and stylistic mimicry are sometimes prime objectives and a major measurement of achievement.

Similarly, mastery of notation, a complex system of symbolism for the transcription and recall of notes, can so dominate the study that the reason for the symbolism becomes obscured. Note reading is substituted for conceptual understanding, and rhythmic computation, often divorced from a musical context, becomes major activity.

The third characteristic of music, the consistent search to extend and expand the means of the art, dictates the atmosphere of learning which must dominate the study. The student must not be trapped by static methodologies which largely demand rote responses or recognition of commonplace factors. The study must be filled with the action of discovery. It is far more important in the classroom that the student regard himself as a creative musician, experimenting, interpreting, and discovering for himself the concepts and potentials of the art, than that he follow any prescribed pattern of teacher-dominated instruction. The essence of the art of music becomes most clear when the student explores for himself the nature of the interaction of the elements of music and becomes involved as a creative musician in a personal search for musical meaning. Studies which are devoted to an analysis of the experience of others or are solely confined to performance mechanics are simply inadequate to convey the intrinsic and viable nature of the art. The atmosphere of learning must be one in which active exploration, personal discovery, and the exercise of judgment are the fundamental processes for learning. As Kline has said, "The logic of discovery is far more exciting than the logic of the discovered".

In summary the study must provide the student with the fullest experiences in music as dictated by the nature of the art. He must become involved in the total process, composing, performing, conducting, listening with sensitive awareness, and evaluating. His participation in these activities must always be in the spirit of a musician, not an imitator. The study must deal with the inherent concepts of the art and be so formulated that the student discovers for himself the nature of interaction and relationship in the elements that bring meaning to music. Finally, the materials of instruction must be drawn from the total spectrum of the art with primary emphasis on the materials of the music of today. For the strongest bond between the musical art and the student is sensitivity to contemporary life.

OBJECTIVES OF THE MMCP CURRICULUM

In the MMCP a great deal of attention has been given to the role of the student in education. Most of the learning time has been allotted to activities in which the student functions as a musician. His learning is generated by his own needs in accomplishing both interim and long term musical goals of performance, composition, and interpretation. The program is largely life oriented with the students constantly involved in "doing" and using music. For them the acquisition of information and study data is more a by-product of their production-oriented learning experience than the immediate goal.

In such an educational plan the student has a wide spectrum of choice about what information he acquires, how he interprets it, and what he does with it. While the sensitive and skillful educator can focus the direction of the class toward the exploration of certain concepts or the exercise of particular skills, he cannot control the type or extent of discovery by any one student. The teacher cannot impose musical judgments, or a uniform perspective. Objectives or intentions of the program, therefore, do not deal with identification or retention of systems and facts but with the development of musical behaviors.

In considering objectives in terms of musical behaviors, it is important to remember that the classroom is not a construction site. There is no single static product which the school is committed to produce. The curriculum planner is not an architect designing a life style for a vast number of students. The teacher is not a builder who must rigidly follow a highly detailed blueprint for operations. The students are not materials to be externally formed and developed to predetermined specifications. And knowledge, perspective, interest and inner will are not inanimate items to be systematically piled and cemented into place. In other words, the behaviorally oriented program is directed toward the use of knowledge, so it must respect and encourage the individuality of the student in the whole process of learning.

To use the educational environment to program the students to specific problem solutions, single interpretations, and monolithic responses which are then measured according to category and degree, is to deny the dignity of human growth and warp the purpose of intrinsic behavioral change. Such a condition may indeed affect the behavior of the student by walling in his perspective and restricting his intuition, but this is the antithesis of musical behavior as implied by the MMCP Rationale.

The behavioral objectives of the MMCP are very tightly interwoven with the process of learning. In this curriculum the student is a musician from the moment of the first strategy. While his level of musical thought will certainly not be comparable to that of the experienced musician, the way in which he functions is parallel. He is simultaneously experiencing and becoming experienced in the behaviors of the musician. In this manner he is fulfilling the terminal behavioral goal of the curriculum at every moment of his participation. He is involved with the creation, production, interpretation and evaluation of musical thought. The responsibility of the teacher is to guide the student to deepen his understanding of complex musical structures without divorcing him from the independent explorations and discoveries which characterize musical behavior.

Characterizing Musical Behaviors

What are musical behaviors? How can one identify and qualify those behaviors which, lumped together, are conceived to represent musicianship? There are two possible lines of investigation. First, from an analysis of the inherent nature of music, certain characteristics of musical behavior can be inferred. Second, a study of the roles and responsibilities of musicians will provide insight into the areas of operational behaviors exercised by musicians and the types of interest and concern they exhibit.

From Music to Musicians. In the preceding Rationale three fundamental conclusions about music were stated. From the first, "... music is an agent for the projection and clarification of thought...." it is

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evident that the musician functions largely on the basis of his aural sensitivity. He hears and finds meaning in the things he hears. He is not dependent on verbal or written explanations of music in order to make judgments or respond to musical stimuli. It is also apparent that the musician is more than a receptor, he is a producer. He is actively engaged in the creation and interpretive performance of music on a level which transcends operational mechanics, on a level of personal thought.

The second characteristic "... a continuing art, always sensitive to and interpreting the present..." infers that musicians, in the creative aspects of involvement, are concerned with the musical thought of our time. It must be presumed that a musician is familiar with and participates in the musical scene of the latter half of the twentieth century. This does not preclude his understanding of or appreciation for the music of other times, but it does frame the conditions of his creative involvement. The second characteristic also indicates that the musician does more than derive satisfaction from his art. By the fact that music is a continuing art and not a static or completed set of occurrences, the musician is a contributor to the continual development of musical thought and practice. It is his knowledge of music and society today that influences the extent and manner of his contribution.

The third point about the nature of music "... a vehicle for man in his constant search for individual creative fulfillment..." leads to two conclusions about the musician. First, he is a risk taker. He ventures out from the known into the unknown. He is not afraid to explore ideas which have not yet been documented or theorized. Second, the musician has a creative imagination. He sees past the commonplace and can think beyond the prescribed limits of established practice. Often he follows his intuition to create new forms, new sounds, new interpretations. He is far more a developer of thought than a subservient follower of systems.

From the Rationale on Music, then, it is apparent that the musician pursues creative and judicial involvement and employs analytical thought only as a means in such pursuits; that he is far more concerned with musical meaning than musical mechanics; that he is inquisitive about and cognizant of changing musical ideas; that his participation in music is generated by his own sensitivity and sense of fulfillment; that he is constantly reaching beyond the level of his previous experience; and that he uses music. He does not simply stand back and observe it with reverence, he uses it as a means of creating, exploring, and in his own way, achieving.

From Musicians to Musical Behaviors. Even at first glance it may seem that some of the musical behaviors inferred by the Rationale are in conflict with the operational behaviors of many people commonly identified as musicians. This is understandable, because for the most part our observations of musicians are limited to the way they function in their particular jobs. Often the nature of the employment, predicated more on pragmatic than artistic concerns, sets rigid limits on the exercise of musical behaviors. There may be demands for conformity and restraint of personal judgment. In some positions, the principal requirement is simply dexterous skills; in other circumstances, the musician may spend his working day writing descriptions of music to satisfy educational or other social purposes. Whatever the restrictions, it is difficult when observing musicians to see past the immediate job demands and identify those musical behaviors which go deeper than the occupational strata.

There is another factor that must be recognized when observing the musical behaviors of musicians. Most individuals tend to concentrate their attention on one challenge or task at any one time. Often these areas of concentration are but a part of the person's total interest or scope of expertise. In some cases the particular area of focus may be so provocative or personally rewarding that a considerable portion of the individual's life may be spent within a very narrow spectrum of the discipline. This is not necessarily a narrowing experience. For instance, many musicians have carried on ethno-musicological research in order to broaden their perspectives of music and frames of reference for creative exploration. The danger in identifying musical behavior is that any act may be considered in isolation from the context which gives it reason. In many cases it is impossible to ascertain what the reason is or whether it is aligned with the musical behaviors identified from the Rationale. Certainly we cannot presume that all observed behavior is so aligned. There is always the possibility that the reason may simply be artistic or intellectual closure.

For the purpose of developing behavioral objectives for the educational program, these pitfalls of misinterpretation can be avoided by limiting the range of information which is sought. A study of musicians shows that there are identifiable areas of conduct which are common to all musicians to some degree regardless of the type of participation in music or the level of involvement. All of these areas of behavior require certain kinds of skills or information. Often they require both. But the existence of the behavior is not contingent on the quantitative aspects of either skills or information; nor does the mere display of skills or the acquisition of data constitute musical behavior. On the other hand, skills and data facilitate increased levels of musicianship when they are considered within the realm of those behaviors previously drawn from the nature of music,

The first area of musicians' behavior is the hearing and distinguishing of sounds in a way that is unique to the art. Of course, this implies an aural memory; musicians can recall and identify sounds or groups of sounds. This memory also serves them in establishing relationships between sounds such as demanded in vocal and instrumental performance, orchestration, composition, etc.

The second thing musicians do is create. This creative ability takes many forms - improvisation in jazz, rock or other idioms, formal composition, or the interpretation of a composition in a fresh way, but it always involves inductive and intuitive thought in music.

Third, musicians play instruments and sing; they possess dexterous skills. They have gained kinesthetic control of sound producing instruments and use these sound sources to meet the demands of their musical thought.

The fourth action of musicians concerns evaluation. This and the fifth category, interpretation, are evident in many kinds of musical conduct but are extremely complex. They imply understanding, judgment, personal confidence, and aural sensitivity. Because of the complexities of these two categories, there are many levels of musical evaluation and musical interpretation, and every musician's abilities to evaluate and interpret constantly change.

The sixth area deals with the use of notation. All musicians do not possess this skill or have a need for it. In many musics, notation is unnecessary. In much of the music of our culture, however, notation plays an important role in musical performance. Musicians are generally able to translate sounds in at least the traditional system of notation. As new musical requirements arise, there is an increasing demand for expertise in other notational schemes.

Seventh, musicians display a wide variety of technical proficiencies. They are capable of mechanical operations such as tuning instruments, making reeds, and reparing (within limits) and maintaining instruments. As new devices, particularly electronic machines, are introduced into music, there is a growing necessity for technical proficiency with tape machines, synthesizers, filters, etc. Musicians also evidence technical skills in musical activities such as orchestration, arranging and conducting where the problems are more structural than mechanical.

Categorizing Objectives

In the preceding pages, many kinds of musical behavior have been identified. Some of these suggest knowledge, conceptualization and judgment; others imply personal attitudes about oneself, music, and musical involvement. Many behaviors demand skills in dexterous, aural and notational operations. Underlying most of these musical behaviors is a suggestion that there is a quality of intrinsic meaning gained through involvement which may be unique to the arts.

By viewing the stated behaviors in these four divisions, cognition, attitudes, skills, and aesthetics, the substance and objectives of the curriculum can be linked directly with the art. It is possible to plan the learning experience on the basis of the nature of music and characteristic musical behaviors rather than on the accrued habits and artificial structures of the educational system. However, it must be remembered that even these four divisions are synthetic. Any such separation of the components of experience is inconsistent with the way musicians operate and think in music. There are only two reasons for this division; it offers the educator an efficient means for determining substance and a way to remain sensitive to the progress of the students. The actual learning experience cannot be chopped up into chunks of cognition, skill, etc. The manner of synthesizing these four areas for student involvement in music is explained in the chapter, "The Shape of the Curriculum".

Cognitive Objectives. The MMCP curriculum is developed on a spiral of musical concepts. These concepts, whether they be inherent or idiomatic, are basic posts of knowledge from which an entire structure of personal logic can evolve. While the concepts in themselves can be identified as separate musical ideas, the program is so designed that each of these elements of musical thought is explored in a variety of complete musical settings. In this way the concept is not viewed as an isolated fact, but as an integral part of musical reasoning. The meaning of the concept is drawn from a larger logic.

Since the core of the program is the spiral of concepts, the student's musical growth will be highly related to his assimilation of the concepts into his expanding frame of reference. This growth can be readily assessed in an operational way since the nature of the learning process within the MMCP program is based on creative output. What the student knows can be gleaned from the way he uses his knowledge. He is constantly involved with musical problems in the form of creative tasks. The musical solutions he employs and the judgments he makes indicate his grasp of relevant concepts. Assessment of cognitive growth can be made by framing musical problems which call for inductive, intuitive, or deductive use of specific musical ideas.

Attitudinal Objectives. High on the list of priorities are those objectives which relate to the attitudes developed by the student. The fostering of positive attitudes is crucial if personal concern and involvement are to be motivated intrinsically. When the reason for learning stems from external demands, the educational program can be described as an imposition on the student. Such a program will have little lasting effect.

Attitudinal goals of the MMCP can be divided into two categories. The first concerns the attitudes of the student about himself in relationship to the art. It is the objective of the program to have the student develop excitement about and confidence in his own creative potential, to believe in the worth and validity of his own inventive and expressive endeavors. The attitude of openness of mind, of receptiveness to new situations, is also most desirable. The attitude of sincerity and concern without pretentiousness is most vital to the development of total musicality. It is also fundamental that the program uncover and expand the individual's sense of inquisitiveness and sense of personal security in intuitive thinking.

Attitudinal objectives also should include the student's feelings toward music. It is essential that the student become fully conscious of music as a personal medium, that he understand music as being in tune with reality and the essence of life as he knows it, and that he regard music as a way of gaining more insight into life.

Attitudes are not taught. They are developed by the individual from his personal assessment of the worth and quality of his own experience. This does not imply that the educational program is not responsible for attitudes or cannot foster or assess them. Indeed, the entire process of learning advocated by this curriculum hinges on the learner's belief in himself as a creative and productive musician. Should the student simply comply with what he interprets to be the requirements of the class, the experience is simple task and data routine and probably a waste of his time.

It is vitally important, therefore, that the teacher know that attitudes about personal worth and the relevance of music are being developed. The assessment of attitudes, while more difficult than the assessment of cognition, is possible by two means. First, the teacher can devise circumstances where the student's behavior is compared with musical behaviors as drawn from the Rationale. Does the student exercise his own creative and judicial potential, has he an open and inquisitive mind, does he grope for new information and new experience, etc.? Second, the student should occasionally be led to analyze and discuss his own attitudes toward his musical participation. This self-assessment is further amplified in the section on grading later in this chapter.

Skill Objectives. MMCP believes that music is a participative art, that the values of the art to the individual are directly proportionate to his own measure and perspective of involvement. Since music is an expressive form with a distinctive and unique sound language of its own, it is obvious that involvement demands the growth of skills relating to this language. The three categories of skills - dexterous, translative, and aural - are later described in detail.

It must be emphasized that the development of skills is an objective of the MMCP program when these skills serve to enhance, expand, or bring clarity to cognitive, attitudinal, and aesthetic objectives. However, the development of performance, notational or aural skills in isolation from these other goals must be considered irrelevant experience. It contributes little to the musicality of the student or the growth of the art. Even as skills should not be emphasized as fractionated areas divorced from a complete musical setting, they should not be evaluated in isolation. There is no educational value in testing students' playing ability by having them finger scales, or assessing their vocal production skills by matching tones. Likewise, writing exercises in which students fill measures with notes might prove that they can count, but it has little to do with concepts of the musical use of time.

Within this curriculum the first skill requirement is aural, next comes dexterous, and finally translative. In the process of musical involvement the student generates an intrinsic need for the expansion and refinement of all of these skills in order to meet his growing qualitative standards. If this intrinsic motivation is to be maintained, skills must be encouraged and judged for their relevance to the total range of musical behaviors.

Aesthetic Objectives. The ultimate achievement in musicality implies knowledge, attitudes, and skills, but it goes beyond these objectives. It includes the awakening of an aesthetic sense, the ability to comprehend beauty and to find meaning on a plane beyond analysis of mechanics, techniques, or even concepts. The capacity for such feeling involves more than the intellect and the senses. It involves the emotions and the spirit of the individual. Aesthetic insight is a condition which can exist only from one's personal affinity to the nature of the art. While the educational program can deal directly with basic information, with the mechanics of musical operation and with the development of skills, aesthetic sensitivity cannot be taught. It is, rather, an intimate response that may grow from the nature of personal experience. Many of the conditions of this experience can be basic to the educational program. Aesthetic sensitivity can be fostered by educational strategies which demand analytical, judicial and creative thinking. The search for meaning through exploratory composition, the use of available music to gain insight into one's own musical problems, the freedom to react, to accept, to reject, to personally evaluate and interpret are also learning conditions which will influence aesthetic sensitivity.

While the objective of aesthetic sensitivity cannot be directly communicated, the required conditions to meet this educational aim are found in the other objectives and in the processes of learning advocated by the MMCP curriculum.

The objectives in the cognitive, attitudinal, skill and aesthetic areas cannot be conceived in isolation from one another. Even as the curriculum stresses the interaction of musical factors in the process of learning, these objectives are achieved in interaction with one another and form a basis for a unified program of learning.

Defining Objectives

From the identified musical behaviors and the resulting categories of objectives, it is obvious that the curriculum is a plan intended to foster a range of musical behaviors. The next issue is, how can the teacher be sure that the plan is working. The most efficient and reliable way is to prepare objectives, both short term and long term, and assess growth against these objectives. This suggestion may raise the question of how an arts education program geared to a process of personal discovery can at the same time employ behavioral objectives. The answer is simply that objectives can be specified without forcing conformity; the students need not be programmed to narrow perspectives or limited conclusions. On the contrary, the specification of objectives can permit a freedom in learning activities that allows the students a wide range of discoveries and an unlimited opportunity to develop their unique insights.

Certainly, the teacher has a reason for every activity. The pinpointing of this reason by defining objectives not only leads to better planning of activities, it aids the teacher in remaining sensitive to the achievements of the students.

For example: Greg has played in the band for six years. He started in the third trumpet section and gradually moved up to second chair, first trumpet. From his performance in the band and the length of his experience, the teacher may presume that he has an "understanding" of tempo. But is this a reasonable presumption? Probably the only accurate statement that could be made is that Greg can keep pace with other performers while playing in a large group. This is far from exhibiting an "understanding" of tempo. Can he maintain a tempo with other players when he has a completely independent part? Can he maintain a tempo in solo performance? Can he maintain a tempo when conducting others? Can he establish a tempo from a given tempo marking? Finally, can he make decisions about tempo when there are no written directions, decisions which are based solely on his sensitivity to the many interacting musical factors within the composition. While Greg may be capable of all these things, his performance in the first trumpet section gives the teacher very few clues on which to make a judgment of his growth in this area. By defining objectives for a series of activities, each one dealing with one of these considerations of tempo, the teacher can make sure that "understanding" does exist.

In achieving these objectives, Greg's individuality is not suppressed. He is not forced to conform in his musical thought or in his ideas of interpretation. He makes his decisions based on his own frame of reference. But the objectives of the curriculum are met because Greg can handle tempo considerations in five different situations which require many types of judgments.

In preparing objectives based on musical behaviors there are three important "do's" and three important "don'ts".

DO STATE EXACTLY WHAT YOU EXPECT THE STUDENT TO BE ABLE TO DO AS A RESULT OF THE EXPERIENCE.

(The student should be able to establish and maintain a tempo ...)

DO STATE EXACTLY UNDER WHAT CONDITIONS YOU EXPECT HIM TO DO IT.

(The student should be able to establish and maintain a tempo when conducting the band ...)

DO STATE ALL DELIMITING FACTORS WHICH BEAR ON HIS EXPECTED PERFORMANCE.

(The student should be able to establish and maintain a tempo when conducting the band in a composition in which there are three different tempo markings given, Allegro, Andante, Allegretto.)

DO NOT JUDGE THE STUDENT ON HIS PERFORMANCE OF THINGS THAT WERE NOT A PART OF THE OBJECTIVE.

There was no mention in the objective of formal beat patterns, balancing of parts, or dynamic shading. While the student may indeed attempt to deal with these things in his conducting, judgments about the attainment of the objective should not be based on personal extensions of the assignment.

DO NOT CREATE OBJECTIVES WHICH RESTRICT THE RANGE OR SPECIFY THE QUALITY OF JUDGMENTS THE STUDENT MUST MAKE.

The wording of the objective did not mention that the student should limit his conducting to tempo, that Allegro must be considered as 120 beats per minute, that he had to conduct a certain piece which he may dislike, or that the student should adhere to a previous interpretation of the composition by the teacher.

DO NOT GO OVERBOARD IN PREPLANNING A LENGTHY SEQUENCE OF SHORT TERM OBJECTIVES, OR TREAT LONG TERM OBJECTIVES AS INFLEXIBLE AND SACRED GOALS.

It is far more important that learning activities follow the course of inquiry of the students than that they follow the teacher's plan book. In the previously described series of activities, the students could well become engrossed with phrasing, articulation, orchestration, or many other areas of musical thought which grew out of their investigations. Obviously the next activity should deviate from the prepared series and focus on the students' immediate concerns. The spiral curriculum (discussed in detail later) used as a retrospective guide, will assist the teacher in "structuring" such a flexible plan.

Other Suggestions. There is no reason to avoid terms such as understanding, appreciation, sensitivity, etc. Just explain your definition of the word, i.e. Understanding - implies inductive, deductive, and intuitive use of a particular concept.

It is often advisable to state the number of items available, the number of problems to be solved, or the number of factors to be identified. To quantify the expected student performance does not inhibit his perception, it helps him to focus his attention.

No one can predict all of the outcomes or even the most important outcomes of any learning experience. At best, the preparation of behavioral objectives can help in assuring that the curriculum has meaning and movement, that both the student and the teacher will have direction and recognize progress. Some of this progress will be in terms of the stated objectives. Much of it will be in areas not covered by the objectives but related to the total experience. For the student, these unplanned discoveries may be his most significant learning.

Evaluation Systems

The preparation of objectives in behavioral terms has one major advantage which rises above all others. It means that the learning program will be focused on the student rather than on the teacher. No longer can the program be judged on the basis of the teacher's covering of this or that subject matter, the program now hinges on what the students do, not what they could do or even can do, just what they do. This emphasis on the personal growth of the individual raises many questions about evaluation and marking. Is an evaluation system of personal growth needed? Specifically, what should be evaluated - attitudes (quite difficult), skills (relatively simple), cognition (spotty, at best), aesthetic sensitivity (almost impossible) - or combination of all these things? Who can and should be the evaluator? Is evaluation to be a part of the learning experience, or is it to remain as an external factor?

Answers to these questions can be found within the curriculum itself. The MMCP curriculum is not based on any consideration of failure, only on achievement; and every student in his own way will have some measure of achievement. Achievement, then, needs to be identified so that students will develop pride in themselves through a recognition of their own accomplishments. The teacher and the parents also need to understand the students' achievements so that they may remain responsive and assist in the learning process. In addition to student achievement, learning problems need to be identified. There must be some system for assessing and reporting the positive and negative factors of the learning situation. This is important for two reasons. First, the school is an artificial environment regardless of how well it is planned. There is little reason or means for improving this environment unless it is weighed against the school product - the student - in terms of its positive and negative effects. Second, the student must become consciously aware of what works and what does not work for him. He must be given the opportunity to know where to focus his energy and when to "turn off" the system.

One of the major principles of this curriculum deals with the totality of experience from the musical and educational points of view. The grading system should be consistent with this principle in every way. For example, to emphasize an evaluation of skill development separately from the total musical experience which includes attitudes, cognition and aesthetic sensitivity is to create a distorted hierarchy of values which can ultimately narrow the entire learning experience. For the teacher there will certainly be a need to identify student growth in the isolated categories of objectives. But this is not an evaluation of the student, it is an assessment of the efficacy of the strategies and the curriculum. It is the teacher's means of continuously redesigning the learning experience to remain aligned with student growth.

The question of who should be the evaluator is also answered by the focus of the curriculum. It is the student much more than the teacher who needs to recognize achievement, identify learning problems, and assess personal growth. It is the student who should have the opportunity to practice the process of rational thought, evaluation, analysis, and judgment-making.

In this curriculum the processes of learning music stress the exercise of the these facets of critical thinking on a personal basis. To have the student extend his critical thought to a recognition of his own role in the life of the school is to bring the evaluation system into educational experience.

The student, then, must be the principal evaluator of his own learning experience. He should deal with all aspects of the learning situation, the environment, the subject matter and the process, as they affect him. He should assess what he has done and what he has learned. Where he feels it appropriate, he should also give suggestions for change and explain his reasons.

There may be letter grades (a "C" for environment because he can never hear, an "A" for process because he learns best when he works in a small group) which the student assigns to various factors. But more important, he must support his value judgments with a rationale built from his own experience and perspective.

The teacher will not be on trial. He only stands to gain invaluable information which allows him to be a better teacher. The parents see how education serves their child, rather than how the child complies with the educational sys tem. Parents can also observe how their child's values and insights grow and can maintain a partnership with the child and the teacher in this development. Most important, the student gains immeasurably from the educational experience and practice in identifying and assessing his own growth and the conditions which allowed him to grow.

In summary, there are two kinds of evaluation which are necessary. The first is a teacher evaluation of how well the curriculum is working, what effect it has on student growth, and how it should be adjusted to remain in tune with learning. The second is the student's evaluation of personal achievement, and the conditions which relate to his achievement. Through this dual system, evaluation can serve all those involved in the learning process, the student, the teacher, and the parent.

PRINCIPLES OF THE MMCP CURRICULUM

When considering music curriculum there are four constituents which must be taken into account, music, the student, the process for learning, and the educational environment. Since the curriculum ultimately must be a total integration of all of these factors, decisions on each element seriously affect the nature and objectives of the total learning program.

In the development of the MMCP curriculum, the first and most significant step was the clarification of a basic position on the nature of music. This rationale served as a model for the construction of many facets of the educational program and dictated many of the processes which were employed. From the rational it was obvious that the student should never be placed in a subservient position. The answer was to construct strategies and learning conditions which fostered student decision making and student responsibility. The continuing nature of music demanded a broadening of musical perspectives. This influenced the specific development of the spiral curriculum. The emphasis on creative activity in the study stems directly from the concept of music as an expressive art as well as a means of creative venture.

Information on the nature of the student was found in the works of Bruner, Holt, Piaget, Parnes and others. Additional insight was gained from action in other curricular fields. The MMCP focus on learning activities which employ inductive, deductive and intuitive reasoning, the use of discovery oriented strategies, and the obvious concern for the development of analytical, judicial and creative thinking are all consistent with decisions regarding the nature of the learner. The emphasis on concept development and even the definition of the teacher's role were predicated on **a belief that the** learning process in music must utilize and develop the total intellectual capacities of the student.

Both the educational process and the educational environment, therefore, are the tools of the educator. They must be flexible to meet the varying needs and directions of the student, while remaining completely compatible with the art. For they are more than schemes and devices through which knowledge and skills can be imparted, they are the means of interpretation of the essence of the art.

This curriculum has not been developed as a methodology applicable at a particular grade level or for one type of class structure. It is rather intended to serve as an outline of educational activities based on principles which are apropos for all students at all levels of learning. It should be regarded more as a way of learning than as a set of tactical plans which should be rigidly followed in the classroom. Indeed, all ideas presented here are to be used with the greatest flexibility in sequence, amount of concentration or time on any cycle or extent of coverage. In the elementary grades, 2 or 3 cycles may be sufficient for an entire year, while at the high school level many cycles may be explored in one term. It should also be noted that the materials within the cycles may be used interchangeably. Concepts from one cycle may be combined with those of other cycles or substituted whenever the direction of the class so demands.

Only in the area of classroom procedure, which may be regarded as style of operation, is any rigidity implied. In this area of educational style, adherence to four basic principles is considered most urgent. These include dedication to a learning process of personal discovery through creative exploration, a primary emphasis on conceptual understanding, the relevance of contemporary musical thought, and the avoidance of fragmentation in considering musical ideas.

Focus on Discovery

A clear understanding of the difference between discovery and observation is essential to grasp the nature of the MMCP curriculum. Simply stated, discovery means first hand experience, intrinsic involvement, while observation implies recognition of factors which, while they may evoke a personal response, are basically external. To observe the majesty and beauty of a mountain range may bring a feeling of awe or even a revelation of man's comparative insignificance, but it is a far different thing to hike through those same mountains and experience their size, ruggedness, and permanence. To observe a conductor and follow his physical movements and study the reason for these movements is far less significant than a personal experience in conducting and interpreting music. Similarly, to discover the nature of interaction in musical sounds and experience the power to create meaning with these sounds is a far cry from an observation, even an analytical observation, of the creative efforts of others. While both discovery and observation are vital in any learning program, the MMCP curriculum is formed to assure that the process of personal discovery is the foremost means of learning. All subsequent observations can then be made within a frame of reference shaped by experiential knowledge.

When considering "discovery" in music education, the term "creative" is naturally implied, for true discovery of the nature of music usually demands involvement in creative activity. Creative activities are those in which the student is involved in some form of composition or has the responsibility of choice in combining or shaping musical sounds. In such activities he will make personal judgments of many musical factors in order to fashion a meaningful and expressive work. Through active experimentation with sounds and structures the student can discover for himself those concepts of organization and interaction which are fundamental to musical understanding.

It is imperative in this educational program that "creative discovery" is not misinterpreted to include "clever observation". To pretend that the student is apt to discover the nature of music through a class solely devoted to listening and analysis, for instance, is illogical. The same is true of performance classes which are teacher dominated, and where the student merely serves a functional role. Discovery is a totally personal experience which evolves from the proof of one's own hypotheses. Observation experiences which are for recognition of structural factors and techniques in retrospect to their actual accomplishment are educationally valid only when they are used to amplify discovery experiences. A complete reliance on mimicry practice on the other hand, whether in performance, conducting, or composition, is not only educationally unsound, it is completely contrary to the nature of the art.

Discovery is the most productive and exciting means for learning.

Focus on Concepts and Skills

From the rationale it is obvious that musicianship is more than kinesthetic achievement, data retention, or a familiarity with a history of compositions. While these may be facets of the terms of involvement, music is, more fundamentally, ideas in an aural form. It is a way of knowing which demands sensitivity, thought, judgment and a sense of aural logic. In order to develop these qualities the curriculum must deal with the concepts, the factors of principle and reason, upon which music is built.

No consideration is more fundamental to this curriculum than a clear delineation between concepts and skills. In elemental terms concepts are points of understanding while skills are the various means of implementing these concepts, putting them to active use. Concepts may be regarded as those areas of the study requiring logic while skills require kinesthetic action and proficiency in recognition and translation. Certainly both concepts and skills are vital if one is to participate fully in music, but a clear understanding of the basic differences will allow for a responsible attitude about their relative emphasis in the study.

Concepts. The musical language of sounds has little of the type of consistency and rigidity found in verbal forms. Meaning is not expressed in exact terms which can be specifically catalogued but is rather implied through an infinite variety of means, each quite unique to that particular situation. Behind this seemingly ambiguous expressive language, however, are concepts of sound manipulation and organization which allow for order and responsibile interpretation. These concepts are not rules which can simply be memorized and followed methodically. They are rather principles which require logic, personal judgment, and individual evaluation. Hence, conceptual development implies much more than a recognition of a series of items or circumstances or even the ability to theoretically explain the simple application of musical ideas. It infers a broad aural frame of reference which allows meaning to emerge from the interplay of many individual musical concepts in an infinite variety of configurations.

In this curriculum, concept understanding is the primary goal. The core of the program is a spiral of musical concepts which begins with the broadest possible view and progresses to levels of higher specificity and complexity. These concepts are not treated as established regulations, but as open principles to be interpreted within the musical perspective of the individual student. The responsibility for interpretation, then, is always the student's, but the responsibility for guiding exploration falls on the teacher and the curriculum.

In the investigation of concepts there are two points to be considered. First, the interpretation of any musical idea will change as the total musical perspective grows. Therefore, a concept of form, timbre or dynamics can never be simply secured in one instance, it must be rethought and reused over and over again as musical insights evolve. Second, whenever a musical idea is investigated, there must be more than a single track of exploration. Every concept which which is investigated at every stage of student development should be explored inductively, deductively, and intuitively. Through such practices many of the ramifications of a single musical idea will become evident, and a basic problem of conceptual closure will be avoided.

Essentially, the MMCP program deals with two types of concepts, those which may be regarded as **inherent concepts** and those which are **idiomatic concepts.** Inherent concepts pertain primarily to the basic characteristics of the materials of music music. Also included are fundamental structural factors and natural tendencies which override the limitations of one style, period or culture. For example, broad ideas relative to the musical significance of sounds being organized in time are intrinsic to all music. Basic concepts about density, intensity and pitch flow are also inherent, as are concepts about the interaction of the elements of music. Idiomatic concepts are those which deal with period practices, with the organizational schemes which have been devised by composers at one time or another in the history of music. Melody, in the shape of eighteenth and nineteenth century practice, the IV, V, I cadence, rock rhythms, etc. are all very valid musical ideas but must be classified as idiomatic concepts. Inherent concepts have permanence and are applicable to a wide spectrum of the art. Idiomatic concepts have less applicability and are constantly in a state of flux.

It is of extreme importance that these two types of concepts are not confused, that the student does not have idiomatic concepts represented as enduring qualities. Such an error will inhibit his growth of reason and can frequently bring about intellectual closure. This, of course, is not only the antithesis of educational purpose but promotes a view of music which is contrary to the nature of the art.

To pretend that 18th century concepts of single tonality and triadic organizational practices are universal concepts, or to overemphasize 19th century metrical ideas, for instance, is to falsely represent the art. Not only does it deny the continuing and evolving nature of music, it forces the student to a position of extremely limited judgment in the art based on structural practices which have long since been discarded by creative musicians.

On the other hand, the concepts of harmony implicit in triads, quartals, clusters, or other pitch combinations may be explored without idiomatic dogmatism being imposed. The same open or inherent concept approach can be used with pulse groupings and rhythmic stress.

Since concepts of organization are vital if the student is to become involved in creative exploration, it is more plausible to begin the study with inherent concepts, and when idiomatic concepts are necessary, explore first the structural concepts which are employed today. Such experience, unfettered by a curator's perspective, will allow the student to proceed to the broad history of organizational practices without a prejudice built on the rights or wrongs of mere period schemes.

Skills. Music is an aural expressive form. It exists only when sounds are produced, and the quality of the sound production significantly influences the expressiveness of the music. Unlike verbal communication, the meaning in music, even in monophonic production, changes when the timbre of a voice is altered, the tempo of the sounds changes even slightly, or the style, volume, pitch accuracy, or any durational factor of the delivery is varied. An added reason for the demand for the control of quality in sound production stems from concepts of totality. Often music results from the performance of not one person, but many people. The meaning is contained in the interaction of all of the sounds not simply in one individual sound. A slight error in production or a lack of sensitivity by one performer can completely change the connotation of the total sound.

If the student is to discover the nature of music through his own exploration, creative involvement, and exercise of judgment, the development of skills related to musical sound production becomes very important. It is through the use of these skills that his musical ideas will be tested, and his creative judgments proven.

Such skills also allow him to search the

Such skills also allow him to search the music of others for relevant ideas that expand his own frame of reference. Skills, therefore, are required in the exploration of musical concepts. They are the tools which the student uses to make his ideas operational and to test them.

There are three categories of skills with which the curriculum must deal. They are aural skills, dextrous skills, and translative skills.

The first category, aural ski[illegible] refers to the identification of pitch[illegible] durations, timbres, or dynamics, [illegible]ore complex differentiation of ir[illegible]s and combined sounds, and the recognition tasks associated with extended listening. The basic ingredient of all aural skills is memory. Identification of even the simplest sound depends on the student's ability to remember the many factors of articulation, timbre, pitch and volume which characterize that sound. From a more highly developed memory of compound sounds and linear progressions a condition of expectation is often established which serves the student in the intuitive projection of musical ideas. This condition of expectation also bears heavily on one's perception of excitement and meaning in music. Although this skill does not imply musical judgment, interest, or creative imagination, it is a personal resource in the drive toward understanding.

Dextrous skills are those used for instrumental and vocal performance, and certain areas of conducting. They constitute the area where music education has traditionally placed its emphasis. While bands, orchestras, and choirs have dealt most emphatically with dextrous skills, the vocal music class from K through 8 has also been focused primarily in this direction. This is quite understandable, since extensive practice is usually necessary in order to gain sufficient muscular control and mastery of the techniques to meet the demands of performance. Generally the minimum proficiency levels are standardized in order that the creative musicians can have some consistency in raw material.

Translative skills are those used to

work with notation. Notation is simply a recording system. It is a graphic procedure devised to preserve musical ideas and to allow for the reproduction of the specific sounds desired and indicated by the composer. It is a storage and retrieval system, not a way of acquiring musical sensitivity or sensibility. Ability to use this translating system, however, is essential if one is to move beyond the simplest stages of musical involvement.

The relationship of concepts and skills in the learning experience is most critical. If skills are developed as an end in themselves without being necessitated by the demands of an expanding conceptual awareness, the student may become a mere instrumental mechanic or pencil manipulator of notes.

There are two pertinent factors that must be recognized with reference to concepts and skills. First, conceptual understanding can develop much faster than dextrous or translative skills. The student's ability to grasp and use musical concepts progresses much more rapidly than his muscular development. Similarly, his intuitive musicianship in improvisation, when he is dealing only with sounds, far outstrips his ability to mathematically compute these musical ideas for translation into graphic notation.

Second, there is ample evidence which indicates that skill development does not necessarily lead to musical insight, that the performance group is not a reliable educational vehicle for conceptual development. Conversely, in experimental work the MMCP team has observed that creative exploration with primary focus on conceptual understanding has had a most interesting effect on the development of some skills. Translative skills in particular appear to be assimilated easily by the student without extensive drills when the musical concepts and frame of reference, the reason for translation, are established first. In addition, the need for aural realization of the student's musical ideas has motivated considerable personal urgency for developing instrumental skills and accelerated the refinement of aural skills.

These two points concerning concepts and skills are considered basic to the curriculum. First, conceptual understanding, the unfolding of logic, judgments, and reason in musical thought, must not be frustrated by or restricted to the rate of skill growth. While concept exploration must become increasingly sophisticated, the problems must be framed to keep skill requirements within the student's potential abilities. Second, performance is a means for proving, explorring, and clarifying musical ideas. It is also a way of achieving great intrinsic pleasure. Performance alone, however, is a relatively unreliable means for the nurturing of musical insight.

Conceptual understanding is the main goal of the music curriculum for all students. It is imperative for intrinsic involvement.

Focus on Today

Since the MMCP curriculum is geared principally to the development of conceptual understanding and a sense of aural logic, two questions about specific substance are critical. What concepts and areas of the art are most appropriate for the early stages of the study? What music and musical concepts are apt to be most relevant as a continuing core of the curriculum?

The problem of artistic relevance is immediately answered in the rationale. Music, as a viable art, is at any one time the sum of its history. The music of today, the contemporary art, is the product of centuries of growth and many thousands of compositions. Its present form constitutes a reaction to previous creative efforts, an affirmation of the inherent nature of this expressive medium, and a creative extension of earlier musical thought. The sounds of the music of today and concepts that guide it are, therefore, the most relevant for the study from an artistic viewpoint. Of course, the music of previous times and other cultures must be brought into the study constantly. The learning experience would be artistically irrelevant if the student were to be shut off from the history and lineage of artistic achievement which makes the continuing nature of the art apparent. But it is essential that the artistic frame of reference which the child develops be grounded on the here and now, that the unity, logic, and meaning of music be viewed through a perspective which is compatible with the viability of the art.

While the concern for personal relevance is met more by the processes than by substance of the curriculum, the demand for social relevance bears strongly on the questions of substance asked earlier. Social relevance does not imply adherence to the commonplace. In order to be socially relevant, it is not necessary that education be restricted to those items which could be considered of common knowledge or currently in vogue. Indeed, such a condition would eliminate the necessity for the school. It would destroy the value of education as a means for broadening minds and as a way of permitting and encouraging personal growth.

In music education, the demand for social relevance suggests that the study must represent music as an expressive medium for today; that music be primarily considered for its internal consistency with the life experiences of the student and the total environment he knows. This does not mean that music education should adopt any particular "popular" forms of music which have wide public acceptance. Public tastes are often fickle and are generally shaped by commercial considerations. Popular music usually employs such simple musical factors that schooling is unnecessary.

As stated in the rationale, the music of today reflects the broad social and environmental climate of the times. While contemporary musical sounds may be uncommon to the child for many reasons, the nature of the art today is in tune with the real world that concerns him. There is also the consideration that today's art is the basis on which the music of the future will be built. If the student is to be allowed to participate in creating the future, it is essential that he be afforded the opportunity of involvement in the thought, processes, and sounds of today.

Music of our time is the most logical place to begin music study. It is relevant artistically and educationally.

Focus on Totality

Music is created by combining sounds in a meaningful way. It is the interaction of the various sounds and the totality of their influence on each other that determines the meaning. Musical understanding implies the ability to comprehend meaning from the total effect of these combined sounds.

In perceiving music no single element of sound or isolated organizational scheme stands alone. Pitch is relative to timbre, rhythm to dynamics, harmony to duration, timbre to tempo, dynamics to spacing, melody to structural balance, etc. We hear and we know by developing a sensitivity to the totality of the music. Musicality is refined sensitivity.

It is of extreme importance in the MMCP program that this concept of totality evident in every musical experience of the study. Musical factors should never be totally separated from the musical settings which give them significance. A fragmented study can only produce distorted perspectives. While in any educational strategy the primary focus may be on one concept, (i.e. pitch, repetition, clusters, pulse) the relationship of this concept to a total musical framework must be maintained. An exclusive study of form, harmony, orchestration, melody, or any other isolated musical factor tends to inhibit not only the student's perceptive capability but the significance of the factor itself. All educational experiences within this program, therefore, must deal with the relative roles of musi music factors in total musical seetings. No single concept or contrived theoretical division of the musical thought shoul should be plucked from the totality of music and treated as an entity divorced from the musical scene.

The term "totality" also refers to the learning activities of the student. If one is to develop sensitivity to music through intrinsic experience and cognitive growth, the factor of breadth in education is most critical. A narrow experience, regardless of its intensity or duration, produces a narrow understanding. A variety of educational experiences where the subject matter is considered from many points of view is far more apt to open minds and allow for an extended frame of reference.

In the MMCP curriculum active involvement in all areas of the art is believed essential. Each student must have a responsible role in all activities concerned with music where logic and judgment are demanded. He must personally experience the creative thought and process of the composer, the interpretative judgments of the conductor, the responsiveness and skills demanded of the performer and the critical evaluations of the knowledgeable listener. All of these experiences are imperative if the student is to gain the breadth of insight which will allow for total sensitivity. Limited experiences such as constant performance, or even constant creative activity without further involvement in the total musical process, tend to produce students who, while they may have a remarkable ability at a specific skill, have limited interests and narrow judgments. An example of this is too frequently found with the professional performer whose interests in music are confined to the repertoire for his instrument, and whose judgments of music are limited mainly to instrumental techniques.

The primary responsibility of music education in the schools is not to produce remarkable music either through incessant stress on performance or by catering mainly to creative talent. The emphasis of music education should rather be on the development of sentitive people who have the breadth of insight and skill proficiency to use music for its intrinsic meaning and value to them. Through adherence to the concept of totality in educational experience, the MMCP believes it is possible to accomplish this goal without discriminating against the highly motivated or gifted student. His personal growth is allowed and fostered by the unlimited opportunities for personal exploration. He need not be restricted to the median level of the class.

Totality of experience in the musical process is essential to the development of musicality.

EDUCATIONAL ENVIRONMENT

The basic requirements for the educational environment are established by the positions taken on the nature of the art and the nature of the study. The interpretation of substance demands a learning atmosphere in which a student has an unusual amount of both freedom to think and responsibility to act. The nature of the study requires classroom conditions in which creative exploration can thrive.

Included in the educational environment are all those extrinsic factors which serve to support and encourage learning. These range from the class structure to the physical arrangement of classrooms. The teacher is a part of the educational environment. The scheduling process, the technical equipment, the structural materials, and the setting of the music class within the total school structure are also items of the environment. All of these factors must be in tune with the basic principles of the curriculum if the learning program is to be effective.

Every class structure must be considered as a vehicle for learning, a condition which is devised to allow the student to function and achieve at the highest level of his potential. Vehicles such as bands, general music classes, choral groups, ensembles, etc., are not entities in themselves; they are simply educational situations which must be formulated to meet all of the essential principles which have been established for the total music curriculum.

The Role of the Teacher

In the MMCP the purpose of the classroom is to insure that the student will become involved with and gain an understanding of music. Previous discussions of the procedures for encouraging involvement through personal discovery and creative exploration suggest the nature of the teacher's role. The teacher must be as unintrusive as possible, and resist the impulse to inflict his expertise on the student. He must be a guide, a creator of problems, a resource person, a stimulator for creative thinking, and an astute musician capable of understanding complex musical ideas, while remaining sensitive to the creative insight of the students. It is not his prerogative to impose judgments but rather to cultivate them. His function is to stimulate not dominate, to encourage not control, to question far more than to answer. Discovery may be guided but never dictated. Little needs to be said of the teacher at any level who uses his students to fulfil his own musical needs and ambitions. The results of bands, orchestras, and choruses which are completely dominated by the teacher, where all musical decisions are delivered by the teacher, and where conditioned response is far more important than student judgment, speak for themselves.

Finally, creativity cannot be inflicted on the students. The creative classroom can only function where the teacher as well as the students are involved in creative discovery. To understand the creative process and the excitement of intellectual exploration, and to be sensitive to the insights and problems of the students, the teacher must have confidence in his own musical judgments and a personal creative experience which arises from his own persistent inquiry.

The Music Lab

The Music Lab is an educational environment created to allow and motivate intrinsic involvement, personal growth, and musical insight. It is a learning atmosphere where creativity is honored, judgment-making is practised, personal viewpoints are considered; where music and sincerity are respected, and where the logic of discovery is considered far more important than the logic of the discovered. Here the musician's roles are played. Every student becomes involved in the total process of music: composing, performing, conducting, listening, enjoying, sharing, and reacting as musicians always have. It is an experience in the real thing on the level of the student's own capabilities.

The principles of the Music Lab are born from the artistic and educational rationale of the MMCP.

1. Discovery is the most productive and exciting means for learning.
2. Conceptual understanding is the main goal of the music curriculum for all children. It is imperative for intrinsic involvement.
3. The music of our time is the most logical place to begin music study. It is relevant artistically and educationally.
4. Totality of experience in the musical process is essential to the development of musicality.

In the Music Lab there are several unique features:

1. There are several types of related activities which are available to the student. Within certain boundaries he may choose those things that excite his curiosity and imagination.
2. Much of the student's Lab time is not scheduled by the teacher. This allows the student to exercise his own sense of personal responsibility in planning his time to meet his own needs.
3. The majority of Lab time is devoted to individual and small group learning experience, thus freeing the student from the bounds of the median level of large group instruction.
4. The teacher is not constantly the point of focus of the entire class. This permits individual perspectives, personal discoveries, and a wide range of judgment-making by the students.
5. More than half of the teacher's time is available for individual contacts to meet individual needs.
6. Musical concern in the Lab is not divorced from music in the real world. The Lab encourages and uses a broad spectrum of musical observations, musical experience, and out-of-school talent and involvement.
7. Many different activities may be going on at the same time in the Music Lab.
8. Student strengths are respected and are utilized in assisting other students, particularly in the area of skill development.
9. Planning is based on a large time block rather than on a day-to-day basis.
10. The nature of the various forms of involvement provides that each student can gain respect, both personal and from his peers, as a musician and as a creative individual.

Types of Musical Activity. In the Lab there are seven major areas of activity. Included are:

1. MMCP strategies. These involve composing, performing, evaluating, conducting, and listening and are thoroughly described in the Synthesis.
2. Student Recitals. The purpose of this activity is to give students with performance skills an opportunity to share the results of their effort with others. It also fosters the attitude that all musical experience is important, not just that fraction of it which is initiated in class.
3. Listening to Recordings. By using 6 to 10 head sets rather than speakers, listening can be a personal experience to be enjoyed or absorbed when it is relevant. (There may be a few instances when speakers will be used to allow the whole class to focus on one recorded example.) In the Lab most recordings will be selected for their relevancy to strategies. From 4 to 6 such musical examples will be available for each time block. A similar setup in the school library with a free selection of music should be strongly encouraged. Some visuals may be advisable at the listening station.
4. Research and Oral Reports. Students should be encouraged to share musical insights with the class. Reports may be about music in or out of the class, but should generally deal with musical factors, not personalities. A clinical report on a new rock sound or a report on a concert are equally desirable. All reports are oral and open to critical discussion by the class. Materials for research are available in the Lab but most research should be done out of the Lab.
5. Guest Recitals. At frequent intervals

guest performers should be invited to class. Their time should be divided between performance and a seminar in which the students are free to question, discuss and critically comment on the music, the performance, the instrument, the music profession, etc.

6. Singing. Group singing should be encouraged for the joy and pleasure it gives. The purpose is largely aesthetic. Singing in the Lab is not treated as a vehicle for developing note-reading, nor as a training session for public entertainment or later participation.
7. Skill Development. The spiral nature of the curriculum places an ever-increasing demand for skills on the student. In the Lab each student will have the opportunity to develop basic skills through a system which involves students as instructors, the teacher as an expert resource person, and series of sequentially programmed skill tasks. The skill areas covered include the piano, notation, percussion techniques, vocal pitch production, aural discrimination, and conducting.

Physical Requirements. Obviously, such a forward-looking program demands specific physical considerations. In order to allow for student freedom, there must be a high level of organization in class structure and material preparation. While a recommended sample floor plan is included, several points should be emphasized.

1. It is imperative that a room be set aside as the Music Lab so that basic materials, equipment, and the environment are compatible with needs.
2. Areas of the room should be established as specific stations for skills, listening, strategy work, and recitals. This will reduce "wandering" and confusion in classroom operations.
3. Acoustical problems can be minimized by four fairly economical means. The floor should be covered by a wall-to-wall rug. The ceiling must be sound absorbent, activity carrels should be used in the positions described in the floor plan, wall surfaces facing the carrels should be covered with sound absorbent materials.
4. Carrels, tables and chairs should be very light, easily moved, and storable.
5. Practice rooms are most desirable and can be most effectively used.

Scheduling. There are two types of scheduling to be considered: the allotment of time to music within the total school structure, and the programming of time in the Lab. It should suffice to say that any responsible educational purpose cannot be met with less than two 45-50 minute periods each week. This is a minimum requirement and results will be minimal. From 3 to 5 class meetings a week, even for a part of the year, are certainly more desirable.

Within the Lab the use of time is critical to the total curriculum. There must be time for group action, group interaction, and the sharing of mutual concerns. But there must also be time for personal exploration, personal thought, and individual discovery and growth. The long-term planning of the Music Lab makes possible a scheduling process which allows for three types of time:

Closed - that portion of Lab time which is pre-scheduled by the teacher. It is intended for large group activity where all students work together. Teacher time, recitals, guest seminars, etc. fall into this time.

Flexible - the time in class when most students work, listen, or discuss together, but which is not rigidly scheduled in advance. Strategy performance is accommodated in this manner.

Open - the large portion of Lab time which is scheduled daily by each student to meet his own needs. Skill, composing, listening, and research time are programmed in this manner. Sample time charts are enclosed.

The Teacher. Responsibilities of the teacher in organizing the Music Lab are most demanding. There must be extensive preparation of reference materials, facilities, and equipment to cover not just one situation but the many alternative circumstances which may arise. Each block of Lab time must allow for the wide range of interest of the students as well as the necessities of the overall study plan.

MMCP
Music Lab
Fifteen 50-minute Lab Sessions
750 Minutes
Time Allotment

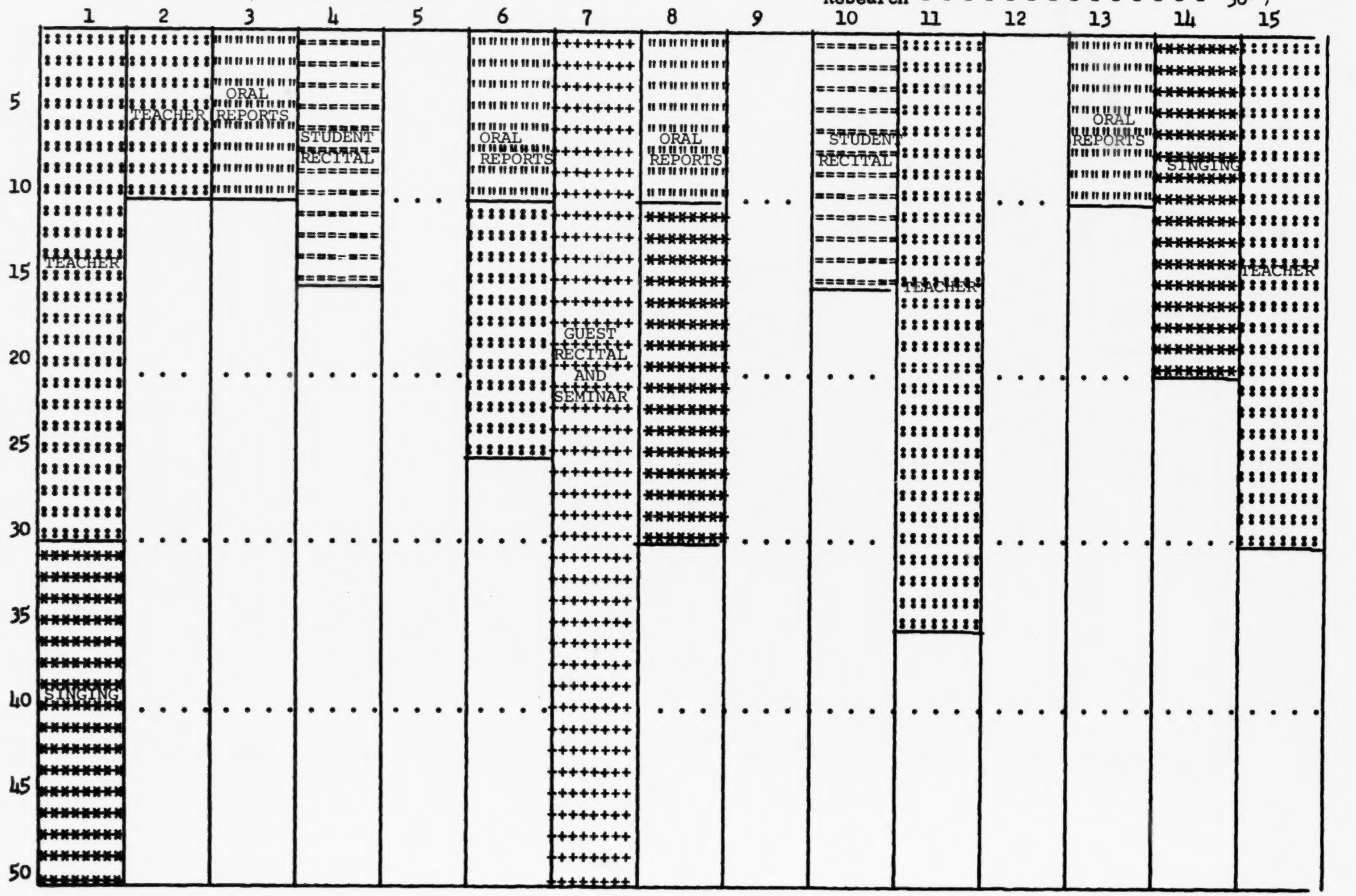
Teacher and whole class (closed)		
Strategy presentation and reinforcement	120'	
Recreational singing	60'	
Guest recital	50'	
Oral reports	40'	
Student recitals	- 30'	
	300'	300'
Teacher and most of class (semi-open, flexible)		
Performance and discussion	80'	80'
Student group or individual activity (open)		
Composition and rehearsal	160'	
Skill development and practicing	120'	
Listening	60'	
Research	- 30'	
	370'	370'
		750'

Name____________________

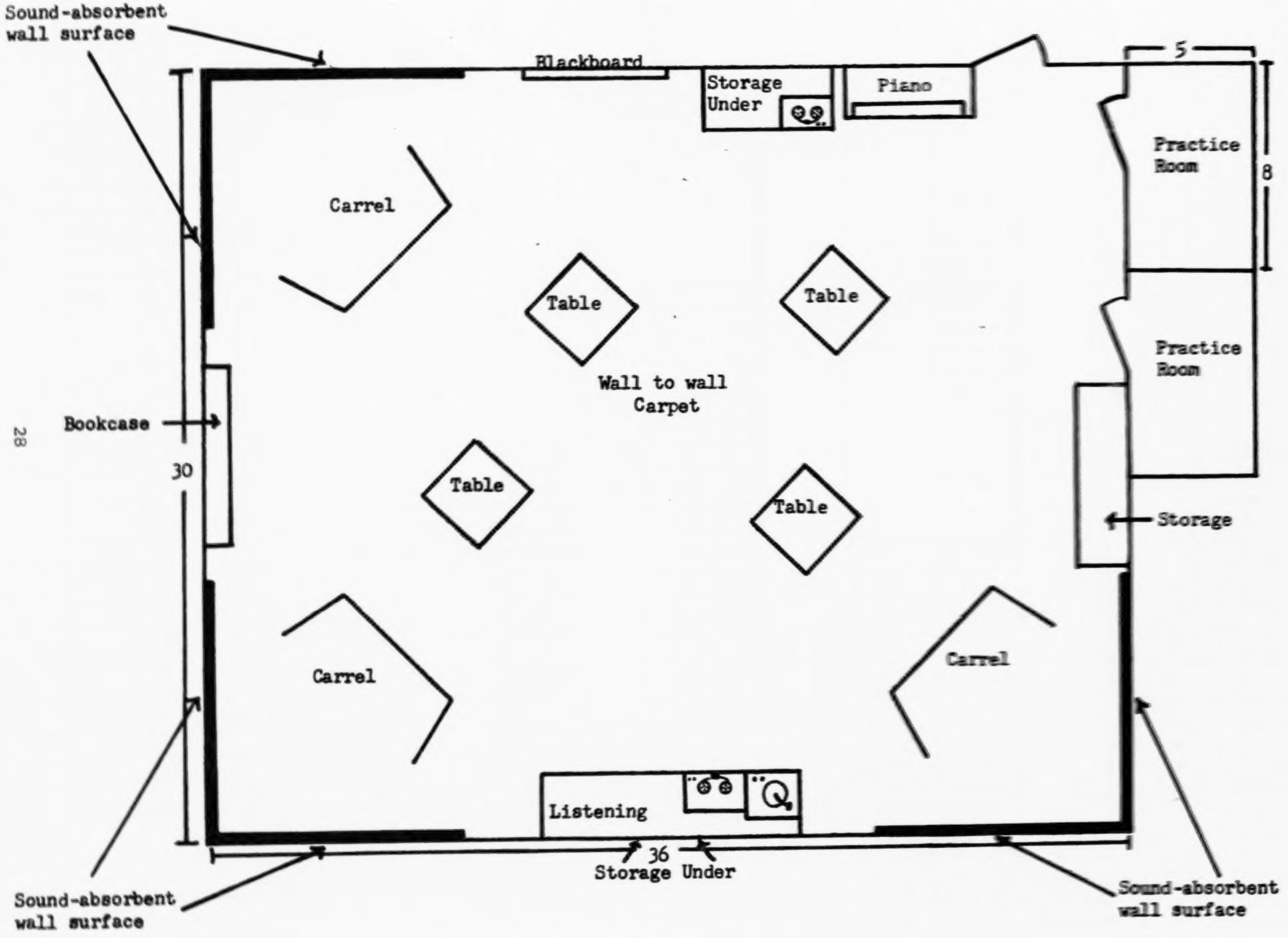
Class____________________

Student Log

Composition and Rehearsal - - - - - 160') Open
Performance and Discussion - - - - - 80') time
Skill Development and Practicing - - 120') (blank
Listening - - - - - - - - - - - - - - 60') spaces)
Research - - - - - - - - - - - - - - - 30')



MMCP
Music Lab



ABC Scheduling

A consideration of the means to provide adequate music Lab time within the total scheduling structure of the school is of crucial importance. The nature of the new curriculum, with its emphasis on conceptual development and continuous sequential growth, raises issues of educational need which demand fresh solutions. With more traditional skill centered programs the concern for scheduling, while continuously a point of discussion, was far less urgent.

An evaluation of school music programs participating in the MMCP pointed to these realities:

1. The extent of memory loss of pertinent concepts in classes which met once or twice per week was enormous. In many cases up to 3/4 of each lesson had to be retaught (not reinforced) in subsequent classes.

2. Creative enthusiasm waned considerably when learning strategies dragged out for two, three, or even four weeks. In some cases the educational value was almost completely lost. On the other hand, it was pointless to devise all strategies of such limited content that they could be covered in one class period.

3. In some cases, the infrequent meetings of music classes resulted in a serious narrowing of the program to the point where the real value to the student was questionable.

One plan for meeting this perplexing challenge found particularly effective at the elementary level, is the ABC (Alternating Block Concentration) scheduling. This was created for use with the MMCP curriculum; it serves as an alternative to the Music Lab structure previously described. An example of the mechanics of ABC scheduling is as follows:

In the X Elementary School there are 5 sixth grades, 5 fifth grades, 4 fourth grades, 4 third grades, 5 second grades, 5 first grades, and 5 kindergartens.

There is one music teacher to cover these 33 classes. Using conventional scheduling procedures the teacher meets each class for 1 forty-minute period each week. Using ABC scheduling the following is possible.

During the first 2-week block the schedule of music classes will be:

M	T	W	Th	F	
6a	6a	6a	6a	6a)	
6b	6b	6b	6b	6b)	Creative music classes
6c	6c	6c	6c	6c)	of
6d	6d	6d	6d	6d)	40 min.
6e	6e	6e	6e	6e)	
5	4	3	2A	1A)	Large group classes
2B	1B	5	4	3)	of
					30 min. each

All large group classes meet by grade level except grades 1 and 2 which are divided in two groups each.

The second 2-week block:

M	T	W	Th	F	
5a	5a	5a	5a	5a)	
5b	5b	5b	5b	5b)	Creative music classes
5c	5c	5c	5c	5c)	of
5d	5d	5d	5d	5d)	40 min.
5e	5e	5e	5e	5e)	
6	4	3	2A	1A)	
2B	1B	6	4	3)	Large group classes

The third 2-week block:

The same type procedure with a concentration on 4th grades. A kindergarten enrichment program is possible during these two weeks, since there are only 4 fourth grade classes.

The remaining three blocks are of one-week duration for each of the third, second, and first grades.

Since a complete coverage of all classes will take 9 weeks, this procedure may be repeated four times during the year, allowing each class four blocks of concentrated learning.

Creative music classes deal with conceptual growth through creative composition and the development of the skills of conducting, performing, notation, and listening. This class is centered in the strategies of the spiral curriculum and includes many of the activities and characteristics previously listed under open time.

Large group classes deal primarily with those activities described under closed time. Activities listed under flexible time will be in both large and small classes at the teacher's discretion.

The advantages of ABC scheduling are numerous:

1. It allows for concentrated periods of learning where continuity can be maintained. A sequence of three or four strategies may be undertaken without interruption.

2. Memory loss between class meetings is reduced to a minimum. This is most desirable in a curriculum stressing conceptual understanding.

3. It minimizes the time lag between the students' creative efforts (musical hypothesis), performance (aural proof), and evaluation thus stimulating the students' motivation to accomplish.

4. ABC scheduling allows the teacher to concentrate her major preparation on one grade level at a time. In short, this will allow the teacher to be a more effective professional.

5. The music class outside the Lab will be released from the extraneous, complex, and often impossible demands of broad coverage traditionally placed on it. This allows for much greater emphasis on vocal development and a broadened range of musical experiences.

6. ABC scheduling is easily adaptable to many types of schools. The plan described here should not be regarded as an inflexible system but rather as a procedural idea.

7. Each student's instructional time may be increased from 200 to 300 per cent without any increase in teacher staffing or teacher load. This is, however, far from indicative of the benefits to each student. The increase in conceptual understanding was many times greater than the increase in instructional time, since the concentration blocks reduced memory loss and served to stimulate intrinsic motivation.

THE SHAPE OF THE CURRICULUM

The MMCP learning program is both concept and process oriented. It is a plan for total musical growth which has evolved from the rationale and basic curriculum principles previously stated to meet the broad cognitive, attitudinal, skill and aesthetic objectives which together must be considered the goals of music education. Since these objectives deal with more than a mere assimilation of data and skills, the substance of the study and the processes by which understanding is acquired are regarded as of equal importance. In this curriculum the substance, the information of the spiral curriculum, and the processes as spelled out in the strategies are totally integrated to assure that learning will have intrinsic meaning and continued significance.

Neither the spiral curriculum nor the strategies should be considered to be restricted to any one particular age level or class condition. Differences in individual perspectives, learning rates, skill achievements and prior learning will affect the extent of concentration on particular areas and the amount of coverage in any specified time. Recognizing these differences, the experience of creative involvement described in this curriculum is appropriate for students from the second through the twelfth grades. It has also been found to be of value to students at higher levels who have not previously had extensive opportunities for creative musical thought.

This learning program is not a methodology, a planbook system to follow without thought or a formula for programming people to uniform responses. It is rather a style for learning which must only be used as a guide. It is intended as a flexible resource for the sensitive and musically astute teacher in interaction with the sensitive and musically perceptive students regardless of whether these students are at an incipient or a more sophisticated level of musical understanding. It describes a way of learning and a flexible sequence of logic in acquiring understanding. The form of implementation of this learning program must remain the prerogative of the teacher in response to the needs and directions of the students.

Spiral Curriculum

What is a spiral curriculum? It is a way of organizing knowledge without fragmenting it. It is a plan which allows the learner to deal with concepts of music without isolating them from an aural context which gives them meaning. With a spiral curriculum the focus is on the unity and interaction of musical factors, as contrasted with a unitary curriculum where component factors of music are considered and studied as separate entities. Most important, the spiral curriculum allows even the beginning student to think, create, and explore music in the manner of a musician.

The sequence of information as presented by the spiral is born from the observed logic of the student. It recognizes that the student has had thousands of hours of exposure to music before he comes into the music lab, and has acquired a vast store of information which, while it is often not formalized, is a strong personal resource for the student in this comprehensive curriculum. In the classroom this resource gained from television, radio, records, movies, etc., must always be considered, for the function of education is not to impose external data on the student but to assist him to build on those insights and perceptions he already has acquired.

The information of the spiral is action-oriented. The structure has been conceived more as an instrument for progressive, creative operation than as a standard for passive observation or response. Although it has some potential as an agent for analysis by vertical reference in any one category (Form I, Form II, Form III, etc.), the nature of the information does not readily lend itself to such use.

Essentially, especially at early stages, the spiral deals with breadth of ideas rather than depth in any one category.

While the spiral serves as a substantive guide for the teacher, it should also be used as a means for checking on previous class experience, as a diagnostic tool for the teacher, to acknowledge what the students know in order to plan ahead. Such a check may turn up areas which have been bypassed or areas which need further clarification. It may also point to specific inclinations of the class which allow the teacher to focus future problems in keeping with the exploratory interests of the students. Often new directions will not be immediately consistent with the format of the curriculum. The tendency of the class may suggest a need to cross-relate information from many cycles. By following such a flexible and sensitive pattern of action, the attention of the teacher will be on the growth of the child rather than on the coverage of the items of the spiral curriculum.

Cycles. The term cycle is used to indicate a level of learning and action. Each successive cycle involves a more extensive level of musical understanding and increased complexity and refinement in the use of musical elements and concepts. Within one cycle there is information regarding each parameter of music which is highly related and sufficient for creative operational use at that level of understanding. Of course, all learning is cumulative so all musical ideas used within one cycle are available for later use in succeeding cycles. For example, timbral considerations of cycle 3 may also be employed in strategies more closely aligned with cycles 7, 8, or 9.

In considering the information of a cycle, the interaction of all categories of information is of utmost importance. Specific areas of pitch, duration, etc., should not be treated as separate entities and divorced from a total musical setting which give them musical meaning and significance. Each cycle is also open ended and not restrictive. New information, whether or not it is in that particular cycle or, indeed, in the entire spiral, should be made available to the student at the moment it is needed by him and pertinent to his inquiry.

The cycle, therefore, is characterized by its broad coverage of all elements of music on one level of sophistication. The length of time spent on strategies pertaining to one cycle may be a week, a month or a semester depending on the grade level, the class time, the teacher's insight, and the amount of emphasis given to the creative and cognitive concerns of the music curriculum.

Strategies

A strategy is a plan of action. It covers all of those procedures incorporated in one activity which involve the student in the total musical process. Included are the framework for operation, the directions for creative exploration, recommendations for rehearsal and performance, suggestions for critique sessions, a sampling of possible reference recordings, possible creative extensions of the strategy and other information pertinent to the activity. The purpose of a strategy is to introduce and explore one new musical idea in a musical setting in which the other musical factors involved are already understood by the students. Often a strategy will demand inductive reasoning by the student; he must group various pieces of information to form a concept relative to the new problem. At other times deductive reasoning will be demanded in transferring a known concept to a new situation. Always the strategy will necessitate the use of intuitive reasoning as the student seeks to imaginatively cope with the unknown factor. In this circle of critical thinking new insights are developed which serve as a basis of understanding for future musical involvement.

The Framework for Operation. The heart of each strategy is the framework for operation. It is the shape for the active exploration, the primary opportunity for the teacher to guide the student in discovery and the challenge which stimulates intellectual curiosity and motivates interest. The nature and design of the framework, therefore, is most important if the strategy is to be effective.

Often this framework for operation is presented in the form of a compositional problem such as, "Create a three-minute composition built on a tone-row for two pitched instruments of contrasting timbre and two nonpitched percussion instruments. The piece should be dynamically and rhythmically consistent with the idiom of the row". At other times the framework for operation may stem from focused improvisation, an occasion, a poem, a painting, a movie, a dance, or may grow directly from the nature of the musical material at hand.

In preparing the framework of operation, whatever its form, the following should be observed:

1. Each problem should contain one new factor which demands an intuitive judgment by the student. This educated guess is most important. It is essentially the hypothesis which the student must prove. The new factor may be a new musical concept, an extension or refinement of a previously explored concept, or an organizational technique.
2. The new factor in each problem should be an outgrowth of previous experience. It cannot be imposed by the teacher simply because of the sequence of the study. It must be related to the demonstrated interest and direction of exploration of the class. To plan exploration of rhythm when the class is excited about timbre or structure is destructive. The only valid sequence is the sequence of the student's logic.
3. All other considerations in the problem must be familiar to the student. The student must have confidence that he can handle the predominant part of the problem successfully. In this way his intuitive sense can be focused on the one new concept and its relationship to and interaction with the known factors in the musical setting.
4. The problem must be well defined. The framework of the problem should be so concise that the student can concentrate his attention and creative energy. The length of the composition, the character, the style, the instrumentation, any desired techniques or concepts, any limitations, and all other considerations should be spelled out so precisely that the student can hone in on the pertinent factors. A tight framework for the problem doesn't stifle discovery, it allows it by focusing thought and creative imagination.
5. Problems should be diversified, they cannot all deal with similar ideas, activities, procedures, or solutions. Diversity may be accomplished in many ways, by varying the extent of creative demands, by using different experimental processes, by allowing the students to frame part or all of some problems, etc.
6. No strategy dealing with the same framework of operation should ever be repeated exactly. If the student was unsuccessful on the first try, the fault probably lies in problem design. If problems are designed with a sensitivity to the student's insight, he will usually succeed. However, no teacher should expect to design problems that are successful 100 percent of the time.

Composing and Rehearsing. As soon as the students understand the framework for operation, laboratory work in composition should begin. In composing, the students develop musical hypotheses, test aural logic, and exercise their critical musical thought. Composing may be carried on either individually or in groups. Both have limitations and advantages.

In group composition 3, 4, or 5 students may work together as a creative team. Because of limitations of class time and the many educational advantages found in this system of procedure, the majority of strategies is directed toward group composition. In this form of action the following is suggested:

1. In the predominant number of strategies, each group should include both strong and weaker students. A great deal of effective learning will result from the interaction of the two. Often the seemingly weaker student is quite creative, and the group process assists all students. Of course homogeneous groupings are very desirable on occasions.
2. The membership of the groups should rotate with each strategy. If groups are left together for any extended period, they tend to become dominated by one student.
3. As many as six groups appear to be able to compose and rehearse simultaneously when placed in separated areas of the classroom. While the resulting noise may be difficult for the teacher or misunderstood by those who are not aware of the situation, it apparently has little effect on the students' ability to work productively. While suggestions for the makeup of the Music Lab will reduce the total volume of sound, the teacher must expect that the interaction and creative trials of the students will be noisy.
4. When working in group composition, composing and rehearsing will usually be simultaneous operations. Through constant aural exploration, while composing, the students become familiar with their music and work to obtain the skills needed for performance.

Although group compositions predominate particularly through the elementary and junior high school years, individual compositions have an important place. Frequently the students will feel the need to work by themselves, to personally control all of the musical factors in an expressive work. It also allows the teacher to assess personal growth in a way that is not possible with group efforts. In the high school and college years, where smaller classes, better skills and more time are available, individual composition will predominate. However, it should be remembered that the rehearsal time of individually planned composition is usually many times greater than that needed for group composition.

The role and nature of improvisation in the compositional process must be clarified. Improvisation is regarded as a creative musical act demanding immediate musical judgments. Often these musical judgments are very complex, demanding instant analysis, evaluation and projected thought. In improvisation one must not only be musically perceptive, he must also be able to anticipate musical thought. In a sense all musical performance demands some level of improvisation. Even where notation is highly specified some judgment is needed. However, it is in improvised performance where instant pitch, rhythmic, timbral and dynamic concerns are weighed and acted upon that aural judgment, sensitivity and creativity are most intensely exercised.

In the MMCP curriculum improvisation plays a substantial role at all levels of operation. It is a means of sensitizing, testing, generating musical thought, demonstrating musical ideas, or clarifying concepts. It is often also a valid musical experience which transcends the educational objectives involved. Whether at the first grade or at the college level, improvisation has a value in developing and exercising musical judgment that establishes it as a vital part of the curriculum. In every strategy, whether it employs free expression, devised notation, or the most explicit form of notation, the musical thought should be generated by musical sounds and aural intuition. In this curriculum, computative techniques with notational schemes have an important functional place but are not considered an adequate substitute for aural logic.

Performance. The performance is the aural proof of the hypothesis. It is the moment when the student puts his musical ideas on the line for personal and group evaluation. Consequently, the performance of every strategy is critical. The following recommendations are based on the experience of the MMCP team.

1. Every piece, phrase, or group of sounds that is put together for a musical reason by the student must be given a performance. There is little or no value in creative effort without the judgments allowed by aural realization.
2. All students can and should perform. Parts may be written very simply for those with little experience, but every student should be involved in performance of his own music and the works of other students. Performance is part of the total musical process which every student must experience.
3. Performances should be conducted by either the composer or another student. Correct beat patterns, cues, etc. should be required as much as any other musical factor.
4. Where possible all performances should be taped so the performers may hear the total musical effect. Experience has shown that the performer is seldom aware of much outside of his own part.

Since music is meant to be shared with others, it is recommended that recitals and informal programs of students' compositions be presented frequently for other classes in the school and for the parents and friends of the students. Brief recitals given for interested students during lunch hours or at other times of the school day will not only be of value to the young musician, but will stimulate a new interest in musical participation in many other students. Recitals for the community allow students to share their enthusiasm with their parents and friends and go far toward establishing a new and vital role for music in the educational program.

Critical Evaluation. This is the second opportunity for the teacher to influence the discovery of the class without becoming either domineering or authoritarian. The first opportunity was in the creation of the problems. The skillful teacher will suggest factors for the students to critically consider, suggest alternatives and raise provocative questions. Such questions as, "How would you change this?", "What other possibilities are available?", "What worked most successfully?", are most apropos. Nonmusical questions such as, "Did you like it?", "What did that remind you of?", are of considerably less value. Great care should be taken to avoid destructive criticism. It promotes little except a feeling of failure.

In general, critical discussion should be focused on three types of thinking: analytical, "What did you hear?"; judicial, "Was that factor used appropriately?"; and creative, "What other possibilities are available?". Such directions for thought will assist the student in understanding and challenge him to be aware, sensitive, and resourceful. It will also provide him with a basis for listening which will remain with him long after the school experience is over.

Usually the students in class will comment most astutely on the values in a piece. They are seldom negative unless the teacher is. Musical comments which are outside the immediate framework of the strategy should be encouraged. The entire process is intended to develop the student's total frame of reference, not just his insight into the immediate problem.

Critical sessions may be handled in many ways including:

1. Discussion after each performance about pertinent musical considerations.
2. Note taking after each performance with discussion at the conclusion of all performances.
3. A general discussion at the conclusion of all performances dealing with identification of common problems and various solutions.
4. A critical session held after performances by using the tape machine.

One caution must be raised regarding discussion. On some occasions discussions of music have little place. They intrude on an atmosphere created by the music and destroy the aesthetic response to the music itself. The teacher must be sensitive to such situations and remember that verbal logic is far less important than a personal musical experience.

Listening. There are only two reasons why a student should be expected to listen to music. The first is that a composition is a personal aesthetic resource and the student chooses to hear it for the intrinsic pleasure and meaning it brings. The second is that a piece of music is a practical resource in the accomplishment of a personal task. This does not infer that the teacher should not introduce music of all types which she considers of value. It rather specifies the conditions in which music is likely to be of any significance to the student. The creative teacher who respects the individuality and potentials of the students will find many ways to create circumstances in which great musical literature becomes a practical resource. Through such means aesthetic values will emerge on a personal level, and there will be no reason to resort to educational imposition.

One of the great values of the MMCP curricular approach is that students are allowed to use, not merely admire, musical literature. In every strategy the student has a personal reason for understanding significant music of other composers. In this creative program extensive use is made of a wide variety of recordings. These are used to provide musical clues for the student, to assist him to find answers to his own creative problems. Such questions as, "How do you keep a pedal going?", "How can I vary a motif?", "Do all pieces have a climax?", are often answered far better with examples from the literature than by verbal explanations by the teacher.

One word of caution is necessary. Whenever a musical example is needed more than one musical reference should be used, preferably at least three. Each of these should be from different musical periods (i.e. one Baroque, one neo-classical, and one contemporary). Such a practice will open the student's mind by allowing him insight into the relationship of music of all periods.

In creating environmental conditions where recorded music is of intrinsic value to the student, the suggestions previously stated under Music Lab are of considerable value. Listening to music is a personal experience. The time, the situation, the environment, and the reasons for involvement in listening must all be carefully considered if the music is to have personal meaning.

Conditions for Strategies

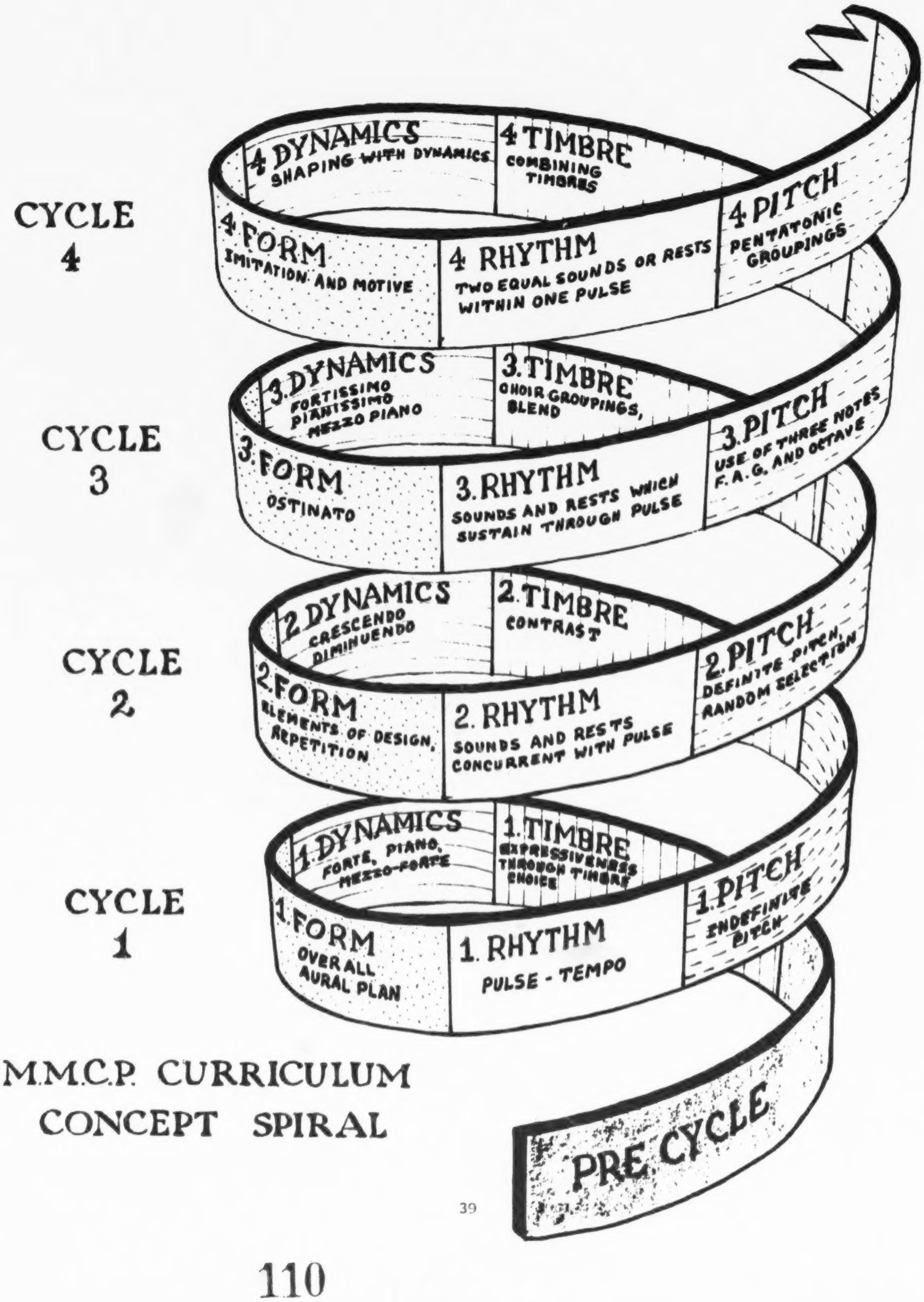
In preparing strategies there are seven conditions which must be met. All strategies must be:

1. honest in terms of the art. The musical concept must be real and consistent with musical practice regardless of the level of sophistication of the concept use. "Rules which are meant to be broken" have no educational validity and often arouse feelings of distrust and irrelevancy.
2. in terms of the students' understanding. They must be compatible with the students' frame of reference.
3. thorough. They must include involvement in the total musical process, not simply a narrow area of it.
4. self motivating. The experience itself must be the reason for the student to participate.
5. flexible. All students must have a latitude of interpretation if the strategy is to become a personal task. It must allow students to work at their own pace in their own way at their own level.
6. designed to open minds. It must not restrict perspectives but rather broaden them. It must be an experience which brings a fresh view.
7. so constructed that it assures success. Every student must have the opportunity for achievement and must know for himself when he has achieved.

GLOSSARY OF TERMS

Music Concept	A clearly defined central idea which will serve as a basis for action in a variety of circumstances. It is also a concrete point of reference upon which decisions and judgments can be securely made and from which the further growth of logic can evolve.
Inherent Music Concept	A broad characteristic or fundamental idea which is common to the music of many idioms, styles and cultures. It transcends mere period practices and theoretical schemes.
Idiomatic Music Concept	A substantial and transferable idea or practice which has or has had extensive application within a specific idiomatic context, geographic setting, stylistic practice or time span. It can be generally identified as either a transitory common practice in the evolution of music, or as an idea unique to certain cultural environments.
Music Percept	An item or idea which is recognized or sensed in a single setting thus bringing clarity to that setting. It is sometimes the first factor in conceptual development.
Music Data	Factual information which may or may not be related to concepts but is considered essential either to participation or to further involvement.
MMCP Spiral Curriculum	An open ended and flexible organization of concepts that focuses on the interaction and relationships of concepts, factors and elements. The structure is not limited by grade level or other unitary restrictions and allows for freedom of interpretation and variableness in individual growth. It constitutes a core of knowledge for educational interpretation, not a methodology of sequential activities.
MMCP Cycle	A level of conceptual refinement related to the spiral curriculum. It describes one horizontal plane of highly related categories of musical concepts.
MMCP Strategy	A specific activity involving students in the total musical process which is designed to focus attention and creative insight on one particular music concept in interaction with other musical factors. It is a plan of action which includes a problem, a process for investigation and experimentation, and opportunities for proof. It also demands the use of analytical, judicial, and creative thought by the students.

MMCP Music Lab	An educational environment created to encourage, support and facilitate student involvement and student responsibility in the music learning process. It is a class functionally and structurally designed to stimulate inquiry, discovery, creativity, and critical thinking.
Creative (in Music)	This term refers to activities in which the student uses aural imagination, aural insight, and aural judgment to fashion sounds into music. The term does not apply to skill-drills in notational formulae or activities where the imagination is focused on other than aural expression.
Inductive thinking	Inductive thinking is the student's ability to make generalizations; to draw small items of information together to form concepts; to use data, observations and facts to interpret larger ideas and understand principles. It is the reasoning process in which information is assimilated to arrive at a broad conclusion.
Deductive Thinking	In the process of deduction the individual applies known concepts or principles to new situations. It is the ability to make use of familiar conclusions to solve unfamiliar problems. Deductive thinking is the reasoning process which allows a conclusion proven in one circumstance to be used as the basis for action in another circumstance.
Improvisation	Creative musical act demanding instant musical judgments.
Planned Improvisation	Planned improvisation is where some areas of the framework for group improvisation have been pre-arranged so that all factors do not require instant aural projection.
Devised Notation	A free system of storage and retrieval that is constructed to meet the unique requirements of a particular piece. It may be diagrammatic, descriptive narrative, pictorial or a combination of any of these. It may deal with details very precisely or be intended for loose interpretation.



M.M.C.P. CURRICULUM
CONCEPT SPIRAL

Cycle 1.

TIMBRE

The quality or color of sound, the timbre, is a major factor in the expressiveness of music. The timbre may be shrill, intense, dulcet, silvery, nasal, smooth, bright, or dull. Choosing the timbre which best expresses what the composer has in mind is one of many decisions which he must make when creating music.

DYNAMICS

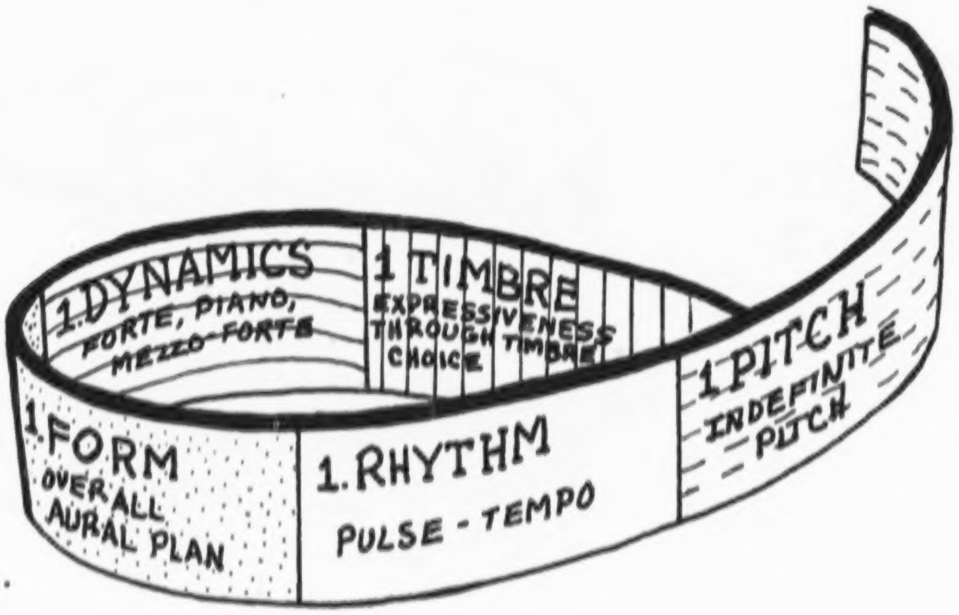
The degree of loudness or softness, the volume or the dynamics of the sound, also must be determined by the composer. Music may be loud, forte (f), soft, piano (p), or medium-loud, mezzo-forte (mf). The volume of the music or any one part of the music will affect the total expressive result.

PITCH

The comparative highness or lowness of sounds is also determined by the composer. Initially, his choices will deal with sounds of indefinite pitch such as those produced by a triangle, a cymbal, a drum, etc. In such cases, highness or lowness often depends on preceding and/or following sounds. (A cymbal sounds low after a triangle but high after a large drum.)

FORM

The plan, the shape, the order, the form of a piece of music is another determination made by the composer. Form refers to the aural design, the way the sounds are put together. The composer's plan or form is based on his expressive intent.



RHYTHM

Tempo is that characteristic of music which makes it appear to go fast or slow. The pulse is the underlying beat (sometimes not heard but only sensed) that may help to create a feeling of motion in music. These items are the choice of the composer.

SKILLS FOR CYCLE 1.

AURAL

Identify the general and comparative pitch characteristics of sounds of indefinite pitch (differences between drum sounds, cluster sounds, sounds made by objects, etc.).

Identify various timbres used in the classroom and the instruments used to produce them.

Identify volume differences in student compositions and in illustrative recordings.

Identify pulse and changes in tempo.

Recognize simple sound sequences.

DEXTEROUS

In performing

Produce sounds (vocal or instrumental) at the instant they are demanded and control the ending of the sound.

Produce the desired tone quality (vocal and instrumental).

Produce sounds of three volume levels (f, p, mf) when allowed by the nature of the instrument.

Maintain the tempo when necessary.

In conducting

Indicate precisely when to begin and when to end.

Indicate pulse, where appropriate (not meter).

Indicate desired volume.

Indicate general character of music (solemn, spirited, etc.)

TRANSLATIVE

Devise graphic symbols, charts, or designs of musical ideas which allow for retention and reproduction. Such visual translations should represent the overall plan, include distinguishing signs for different instruments or timbres, and relative durational factors. Volume should be indicated by the standard symbols: f, p, mf. Words designating the character of the music, such as quietly, forcefully, smoothly, or happily, should also be used.

VOCABULARY

Timbre
Dynamics
Forte
Piano
Mezzo-forte

Form
Tempo
Pulse
Pitch

Indefinite pitch
Aural
Devised notation
Cluster

Volume
Improvise
Composer
Conductor
Performer

Sample Strategy

Cycle 1.

The quality or color of sound, the timbre, is a major factor in the expressiveness of music.

Each student selects an item or object in the room with which he can produce a sound. Preferably, the item or object will be something other than a musical instrument.

After sufficient time has been allowed for students to experiment with sounds or selected objects, each student may perform his sound at the location of the item in the room.

Focus on "listening" to the distinctive qualities of sounds performed. Encourage students to explore other sound possibilities with the item of their choice.

Discuss any points of interest raised by the students. Extend the discussion by including the following questions:
How many different kinds of sounds were discovered?
Could the sounds be put into categories of description, i.e. shrill, dull, bright, intense, etc.?
After categories of sound have been established, experiment with combinations of sounds.

Is there any difference between sounds performed singly and sounds performed in combination?

In listening to the recorded examples focus on the use of timbre.

How many different kinds of sounds were used?
Could we put any of the sounds in this composition into the categories we established earlier, i.e. bright, dull, shrill, etc.?
Were there any new categories of sounds?
Could we duplicate these?

ASSIGNMENT: Each student should bring one small object from home on which he can produce three distinctly different sounds. The object may be a brush, a bottle, a trinket or anything made of wood, metal, plastic, etc.

Suggested Listening Examples:
- Steel Drums - Wond Steel Band; Folk 8367
- Prelude and Fugue for Percussion - Wuorinen, Charles; GC 4004
- Ballet Mécanique - Antheil, George; Urania (5) 134

Cycle 1.

Sample Strategy

The plan, the shape, the order of a piece of music is determined by the composer.

Each student may perform his three sounds at his own desk. Focus on "listening" to distinctive qualities of sounds performed.

Encourage students to focus attention on other exploratory possibilities by investigating the sound producting materials with greater depth.
Can you produce a sound on your object that is bright, dull, shrill, intense, etc.? How is this done?

Discuss any points of interest relative to the activity.
Extend the discussion by focusing on the following questions:
Why is silence in the room necessary for performance to be effective?
How did sounds vary or seem similar?
Which objects produced the brightest, dullest, most shrill, most intense sounds?
What makes a sound dull, bright, intense, etc.

Divide the class into groups of 5 or 6 students. A conductor-composer should be selected by each group. He will determine the order of sounds and the overall plan of the improvisation. Conducting signals should be devised and practiced in each group so that directions will be clear.

Allow approximately 10 minutes for planning and rehearsal.
At the end of the designated time each group will perform.

Tape all improvisations for playback and evaluation. Discussion should focus around the following questions:
Did the improvisation have a good plan? Did the music hold together?
What was the most satisfying factor in this piece?
How would you change the improvisation?
What are some of the conductor's concerns?

In listening to the recorded examples focus attention to the overall shape or plan of the music. In listening to a single example two or three times students may map out a shape or a plan which represents the composition. These plans can be compared and used for repeated listenings.

Suggested Listening Examples:
- Construction in Metal - Cage, John; KOBP-1498
- Poème Electronique - Varèse, Edgar ; Col. ML5478; MS6146

Sample Strategy

Cycle 1.

The degree of loudness or softness, the volume or the dynamics of the sound, will affect the total expressive result.

Using the entire class as performers on object instruments, volunteer students will conduct an exploratory improvisation to investigate the effects of: sounds used singly, sounds used in combination, and dynamics. It is suggested that before the improvisation the volunteer conductors choose 3 or 4 students who will play singly when directed. Conducting, cues for entrances and exits should also be established.

Tape the exploratory improvisations for immediate playback and evaluation. Discuss all perceptions verbalized by the students. Extend the discussion by including the following questions:
How did volume or dynamics affect the total result?
Can all of the object instruments be heard at an equal level of volume when performed in a group.

Groups consisting of 4 or 5 students will plan an improvisation. Focus attention to the quality of sounds used singly, the quality of sounds used in combination, and the expressive use of volume. Consideration for the overall shape of the piece should also be a concern.

Following a short planning and practicing period (about 10 minutes), each group will perform the improvisation for the class.

Tape the improvisations for immediate playback and evaluation. Discuss students' comments as they relate to the improvisations. Extend the discussion by focusing attention on the following questions:
What degree of loudness or softness was used most frequently by the performing groups?
Did the improvisations have an overall shape or design?

Summarize the discussion by introducing forte (f), piano (p), and mezzo-forte (mf). In listening to the recorded examples ask students to identify the dynamic level used most frequently by the composer.

Did you get any musical ideas from this composition that you might be able to use?

Suggested Listening Examples:
- Parade - Gould, Morton; Columbia CL 1533
- Te Deum, Judex Crederis - Berlioz, Hector; Columbia ML 4897
- Prélude à l'Après-midi d'un faune - Debussy, Claude; London LS 503

Sample Strategy

Cycle 1.

The pulse is the underlying beat that may help to create a feeling of motion in music.

Allow 30 sec. for each class member to think of an unusual vocal sound. The sound can be made with the throat, voice, lips, breath or tongue.

Each student may perform his sound for the class. Focus "listening" on the distinctive qualities of the vocal sounds performed.

Discuss any points of interest raised by the students. Extend the discussion by including some of the following questions:
Did anyone perform his sound long enough to communicate a feeling of motion?
How would you describe the motion?

Divide the class into groups consisting of 4 or 5 students. One person in each of the groups should be a conductor. Each group will concentrate on producing their individual sounds to the motion of an item of their choice or one which has been suggested to them, i.e. the steady motion of a carpenter hammering a nail, the steady motion of a worm crawling, the steady motion of a person jogging, the steady motion of a horse galloping, etc.

Allow approximately 10 minutes for groups to plan and practice their improvisations. At the end of the designated time each group will perform.

Tape each improvisation for immediate playback and analysis. Discuss any comments made by the students. Extend the discussion by including the following questions:
How would you describe the motion, slow, medium, fast?
Did it have a steady beat or pulse?

Summarize the discussion by introducing tempo as the characteristic which refers to the speed of music and pulse which is the underlying beat (sometimes not heard but only sensed).

In listening to the recorded examples focus attention on the use of tempo.
How would you describe the tempo, slow, medium, or fast?
Did the pulse or underlying beat change before the end of the composition? What was the effect?

Suggested Listening Examples:
- Flight of the Bumblebee - Rimski-Korsakov, Nicolai; Epic LC 3759
- String Quartet No.79, Op.76, No.5 - Haydn, Joseph; Turnabout TV 34012S

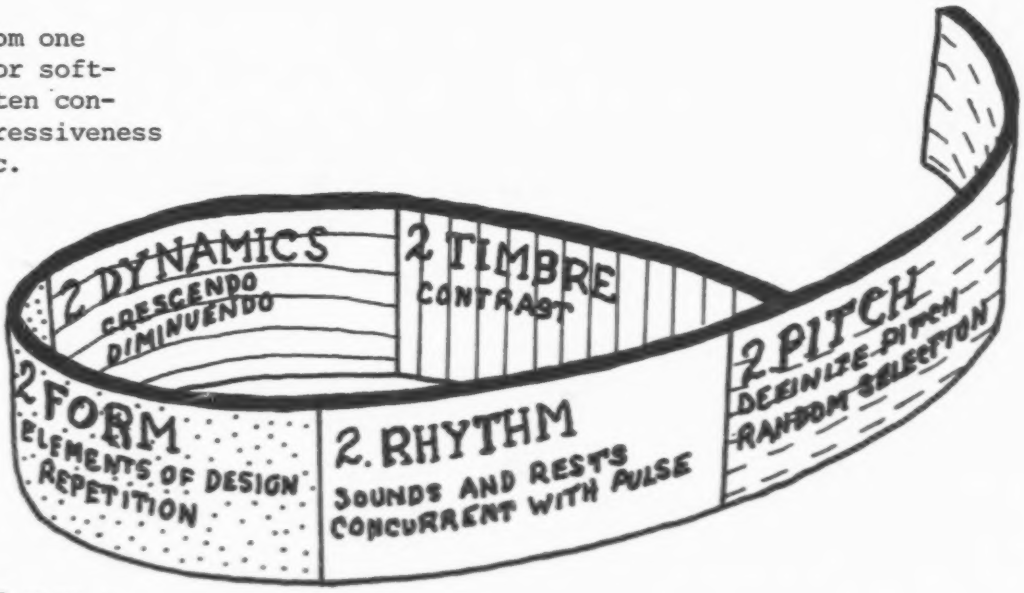
Cycle 2.

TIMBRE

Sounds of different quality may be used effectively to create a feeling of contrast in music. These sounds may occur at the same time. Often, the differing timbres result in clarity for each of them. (When sleigh bells sound with timpani, each is heard clearly and distinctly.) A change of timbre, one sound color followed by a contrasting tone quality, gives variety to a piece of music (sleigh bells and timpani followed by slide whistles and wood blocks). Also, one part of a composition may display one timbre while another section may employ a contrasting timbre.

DYNAMICS

Gradual changes from one level of loudness or softness to another often contribute to the expressiveness of a piece of music. Crescendo, growing louder, and diminuendo, growing softer, can create a sense of climax or anticlimax, of increasing excitement or approaching calm. The rate of such changes may vary, some requiring a relatively long and some a relatively short period of time.



FORM

The re-use of musical material is basic to musical structure. Repetition of single sounds, small groups of sounds, longer musical statements, or whole sections of music has been the practice of most composers. However it is used, repetition serves as a unifying factor in a piece of music.

PITCH

If the pitch of a sound can be identified and can be reproduced by another sound source, it is called definite pitch. There are many gradations of definite pitch between high and low. Any definite pitch may be combined with, or may precede or follow other definite pitches or sounds of indefinite pitch.

RHYTHM

If a piece of music has a regularly recurring pulse, some sounds and some silences may begin with a pulse and end with the next pulse. Several such sounds or rests may follow each other. Any desired sequence of sounds and silences is, in fact, possible.

SKILLS FOR CYCLE 2.

AURAL

Identify the general relationships of a wide variety of pitched sounds.

Recognize contrast in timbre.

Identify gradual volume changes.

Develop memory of simple linear groupings.

Identify simple repetitions.

Identify pulse as it continues through rests.

DEXTEROUS

In performing
- Produce notes and rests which have a one-pulse duration.
- Repeat simple musical ideas used previously.
- Control instrument or voice in gradual volume change.
- Assume correct posture for performance and develop correct techniques for holding instruments, sticks, and beaters.

In conducting
- Indicate crescendos and diminuendos.
- Cue in performers.
- Indicate changes in mood.
- Indicate changes in tempo.

TRANSLATIVE

Prepare musical scores which indicate functions and responsibilities of separate parts. This requires a separate horizontal line for each part.

Use quarter notes and quarter rests where appropriate (not the five-line staff).

Use < > for crescendo and diminuendo, a double bar ‖ for ending, and repeat signs ‖: :‖ for repeats.

VOCABULARY

Contrast
Crescendo
Diminuendo
Repetition
Rest
Concurrent
Definite pitch
Cue
Mood
Score
Quarter note
Quarter rest
Double bar
Repeat sign
Linear grouping

Sample Strategy

Cycle 2.

Sounds of different quality may be used effectively to create a feeling of contrast in music.

Each group will create a composition which is intended to convey two distinct feelings. Students may decide the feelings they will express or use the following suggestion: Describe the feeling of walking through jello and the contrasting feeling of speeding along a raceway.

Divide the class into groups of 4 or 5 students. Each group will work independently in a different area of the room. Students may either select instruments first or feeling first, whichever appears to them to be the most practical.

Each group should plan to make some written plan for their composition. Any kind of written plan is acceptable as long as the performers can understand it.

After sufficient time has been allowed for students to plan and practice their compositions, each group will perform for the class.

Tape all compositions for immediate playback and evaluation.
Focus questions and comments on the following:
How were the two feelings achieved?
How did the quality of sound differ when the feeling changed?
What new musical factors were used?
How would you change the composition?

In listening to recorded examples focus attention to the way in which sounds of different quality are used to create a feeling of contrast in music.
Discussion should include other musical factors as they relate to contrasting feelings, i.e., use of dynamics, tempo, etc.

Suggested Listening Examples:
- Contrasts - Raaijmakers, Dick; Epic LC 3759
- Contrasts for Violin, Clarinet, and Piano - Bartok, Bela; Bartok Records

Sample Strategy

Cycle 2.

> When a piece of music has a regularly recurring pulse some sounds and some silences may begin with a pulse and end with the next pulse.

Using the entire class as vocal performers, volunteer students will conduct an improvisation which makes use of sounds in combination, sounds heard singly, and brief periods of silence.

Each composer-conductor will select three sounds which can be made with the throat, voice, lips, breath or tongue. Each of the three sounds will be performed by a group of students. The class can be divided into three equal groups each with an assigned vocal sound. Before beginning the composer-conductor will relate his cueing signals to the class.

Following the improvisations discuss any analytical, judicial or creative perceptions made by the students. Discussion may be extended with the following questions:
Did you feel a steady pulse throughout the improvisation?
What was the distribution of sounds heard singly, sounds heard in combination and silences?

Divide the class into groups of 4 or 5 students. Each group will choose a conductor.

The students will plan a short piece of music which will be approximately 30 to 40 seconds in length. (This could be done as homework.)

This piece will have a regularly recurring pulse with some sounds heard singly, some sounds heard in combination and brief periods of silence. Students may want to devise a plan to assist them in recalling their ideas at performance.

Tape all performances for playback and analysis. Discuss the improvisations beginning with student comments. Extend the discussion by including some of the following questions:
Was a steady pulse present throughout the improvisation?
Was there variety in the length of sounds used?
To what extent was silence effective?
What made some pieces particularly exciting or interesting?

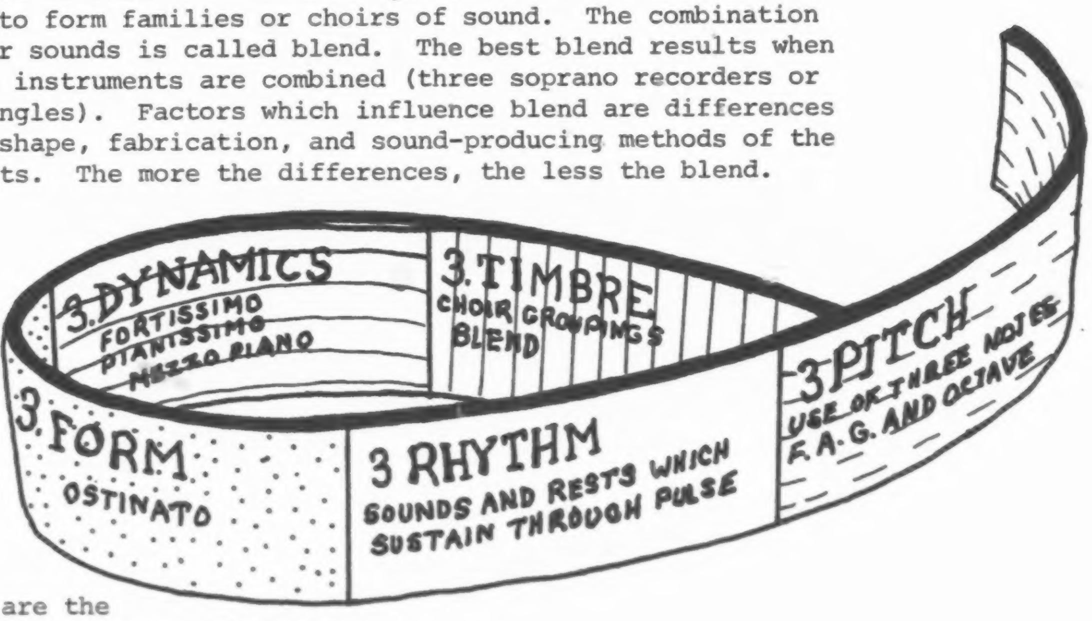
In listening to the recorded examples focus attention on the use of sounds over a regularly recurring pulse. Ensuing discussion could include the following:
What new musical factors did you hear?
How was silence used effectively?
How would you identify the tempo of this composition?

Suggested Listening Examples:
- Pictures At An Exhibition, The Market Place, Catacombs - Moussorgsky, Modest; Columbia ML 4700
- Piano Quartet, Op. 25, Rondo alla Zingarese - Brahms, Johannes; Turnabout TV 340375

Cycle 3.

TIMBRE

Instruments or voices whose sound qualities are similar may be combined to form families or choirs of sound. The combination of similar sounds is called blend. The best blend results when identical instruments are combined (three soprano recorders or four triangles). Factors which influence blend are differences in size, shape, fabrication, and sound-producing methods of the instruments. The more the differences, the less the blend.



DYNAMICS

Degrees of loudness and softness include the extremes of both dynamic levels. *Fortissimo*, (ff) very loud, and *pianissimo*, (pp) very soft, are the terms used to indicate these extremes of volume. *Mezzo-piano*, (mp) medium-soft, is another gradation of dynamic level. To illustrate the position of mezzo-piano in relationship to the various levels of volume, the following list represents each step in increasing loudness: pianissimo, piano, mezzo-piano, mezzo-forte, forte, fortissimo.

FORM

One specific kind of repetition available to the composer is *ostinato*: a recurring musical idea usually involving sounds of low pitch. The constantly repeating ostinato may be based on a rhythmic, pitched, or timbral sequence. It may occur in other than the lowest sounds and it may move from one pitch area to others or from one instrument to another.

PITCH

A note of definite pitch may be repeated once or many times. It may be freely alternated with other pitches or it may be heard only a few times in a composition. On any instrument or other sound source, the pitch which is most closely related to another pitch is its octave. The sound of a note and its octave are almost the same. When sounded together, notes one or more octaves apart often merge into a single new sound. A sequence of pitches repeated in another octave brings variety to a composition. The sequence itself may employ pitches from more than one octave.

RHYTHM

Both sounds and rests which begin on one pulse may continue through the next pulse. In fact, they may sustain through several pulses.

SKILLS FOR CYCLE 3.

AURAL

Distinguish specific pitch differences between F, G, A, and their octaves.

Identify pulse even though sounds may be longer than one pulse.

Identify sounds which blend well or relatively well.

Identify further gradation in volume (ff, pp, mp).

DEXTEROUS

In performing

Develop physical control of instrument to assure the production of desired pitches.

Learn simple finger patterns for producing F, G, A on the piano.

Refine performance techniques to produce broader volume considerations.

Develop techniques to sustain sounds on percussion instruments (drum roll).

In conducting

Indicate long, sustained sounds of indefinite duration.

Balance the sounds of several performers to achieve blend.

Follow simple score.

TRANSLATIVE

Make use of one-line staff for pitched parts to notate F, G, A.

Indicate fermata.

Use allegro, moderato, lento to indicate relative tempo and general character.

Maintain clear vertical alignment in score.

VOCABULARY

Choir
Blend
Fortissimo
Pianissimo
Mezzo-piano
Rhythm

Ostinato
Sustain
Octave

F
G
A

Finger pattern
Percussion
Fermata
Allegro
Moderato
Lento
Vertical alignment

Sample Strategy

Cycle 3.

Instruments or voices whose sound qualities are similar may be combined to form families or choirs of sound. The combination of similar sounds is called blend.

Each group of 4 or 5 students will select instruments which are all quite similar. (A good portion of a period may be devoted to the selection and categorization of similar sounding instruments.) In creating the composition periods of silence should be planned for either all or some instruments. Since the instruments will have little contrast, some other form of variety should be planned.

A score should be prepared by each group. It would be advantageous if the devised notation for each piece was written on a transparency and projected with an overhead projector during performance.
In addition to the devised sound symbols, indications of tempo, dynamics, repeats and a double bar at the end should appear on the score.
An entire period should be given to composing and rehearsing.

Each group should perform in the same classroom position they had for rehearsal in order to facilitate performance. The remainder of the class will make notes regarding the blend of the performing instruments as well as the devices used to achieve variety.

Tape all compositions for playback and analysis. If transparencies were used, follow the score during the playback performance.

A discussion session of a few minutes should take place after each performance playback. The following questions could be used to focus attention:
How successfully did the performing instruments blend?
How was variety achieved in this composition?
Was silence used effectively?
What was the outstanding characteristic of this composition?
Would it be possible to combine groups for a simultaneous performance of two compositions?

Students will select the two performing groups. Each group will perform from their original station. If both groups have a conductor, it might be helpful if a member of the remaining class determines the starting time.

Tape the simultaneous performance for immediate playback and analysis. In addition to the questions asked in discussing individual group performance, further focus attention to the sound of contrasting choirs as well as contrasting musical material used simultaneously.

Experiment with other group combinations. Be aware of any new musical factors which may evolve and incorporate them into ensuing discussions.

Suggested Listening Examples:
- Fantasy in Space - Luening, Otto; Folkways FX 6160
- Sonata No. 4 - Pezel, Johann; Period SP1P 526

Sample Strategy

Cycle 3.

A recurring musical idea based on a constantly repeating rhythmic, pitched, or timbral sequence is called an ostinato.

Using one common subject (to be selected by the teacher) such as "Spring", "Nightfall", "Lincoln's Birthday", etc. each student should write a solo piece which he can perform on either a pitched instrument or a nonpitched percussion instrument.

His solo piece should be from 20 to 40 seconds long in a tempo designated by the teacher. These pieces could be played in class one right after the other to discover the differences in creative musical interpretation of the one common subject. Each student will write his observations of each piece. All performances will take place without planned comments.

Tape all performances for playback and brief discussion at the end of the last solo performance. Focus discussion on the similarities and differences of the musical interpretations. In listening to the playback, students should identify on paper (for later recall) any pieces they feel can be combined effectively.

Recall a student to perform his solo piece. Invite another student to improvise a part to go along with the solo piece. Experiment with several solos and improvisations.

Discussion of the duets should focus on the enhancing characteristics of the improvised part.
Did the improvised part add anything to the piece?
How could it be improved?
When a constantly repeated pattern occurs identify it as an ostinato.

Each student will then compose an ostinato based on a repeated rhythmic pattern. His ostinato should reinforce or maintain the character of the chosen common subject. Students should perform ostinato patterns for the class.

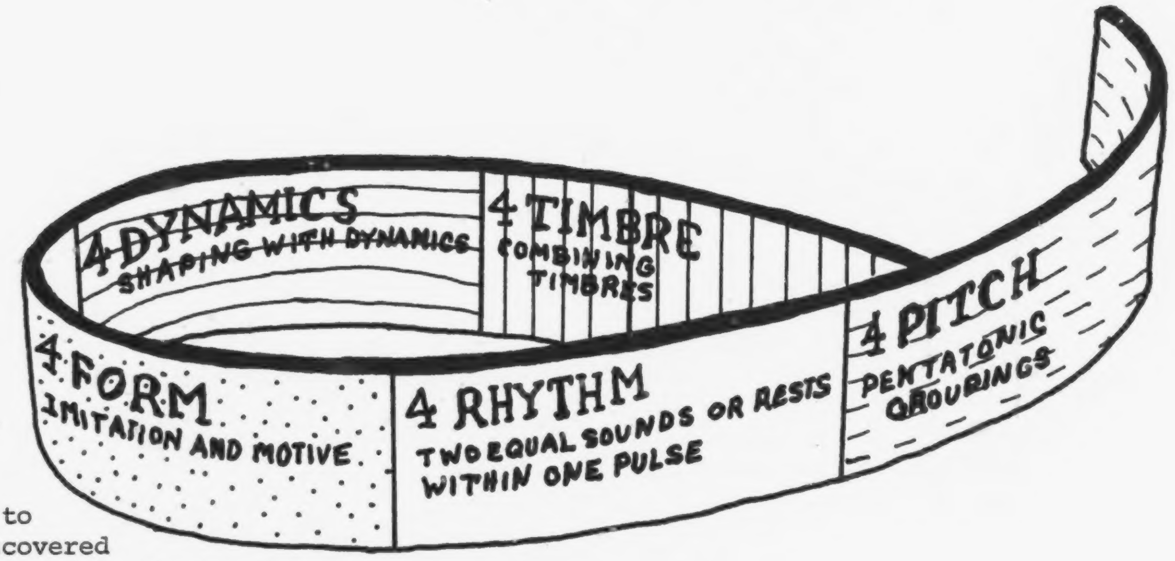
A student conductor will attempt to create a piece by improvisationally combining 3 or 4 pieces and an ostinato. The student conductor may select (from his list of observations) the solo compositions he wishes to combine (either in part or wholly) and will select someone to play an ostinato. The various performers may be spaced around the room to get an antiphonal effect.

The conductor will indicate entrances of various parts and exits for any and/or all parts. The pieces being combined may overlap, may be played one after the other, played completely, played partially, interrupted, etc. as the conductor desires and indicates. Only the ostinato must remain insistent throughout.

Tape all performances for immediate playback and evaluation. Discussion should focus on the particular values and limitations of an ostinato. Other considerations for discussion might be the use of dynamics, use of contrasting instruments as well as contrasting musical material and use of tempo. Has the character of the chosen common subject been maintained in the group work?

Suggested Listening Examples:
- Louisiana Story, Passacaglia - Thompson, Virgil; Columbia ML 2087
- Wozzeck, Act I, Scene 4 - Berg, Alban; Deutsche Grammophon SLPM 138 991/2

Cycle 4.



TIMBRE

Aware of the timbral concepts of contrast and blend, the composer now faces the problem of the most effective use of the qualities of sound available to him. He has discovered that some sounds tend to blank out other sounds and make them ineffective. Sounds with a biting, nasal quality tend to penetrate and cover up more dulcet tones. Low-pitched sounds, when combined with near-by low sounds tend to become muddy, but when used with sounds pitched farther away they are more clearly heard. High-pitched sounds, especially those near the upper limit of an instrument or voice, tend to penetrate and dominate other sounds even when they are at the same dynamic level.

DYNAMICS

Musical sounds have a tendency to group themselves into smaller or larger units. The relative dynamic strength or weakness of each sound within the group is a further refinement of the function of dynamics in music. The composer now must deal with such problems as: in a two-note group, is the first to be louder than the second? In a five-note group, how many louder tones should there be? One? Three? Two? Four? All five? None? Is a crescendo or diminuendo implied?

FORM

Further application of the concept of repetition includes the use of imitation and motive. Repetition of a musical idea, long or short, with some change is called imitation. The change may be in pitch area, instrument or voice, rhythm, dynamics, timbre, or duration. It may effect the whole musical idea equally, or only parts of the idea. A motive is a short, distinctive, easily recognized musical unit which keeps its identity throughout the repetitions and changes inherent in imitation.

RHYTHM

Some sounds and rests do not continue through to the next pulse. They are so short that two sounds of the same length can be played in one pulse. Sounds and rests of this length may be intermingled. They also may be used with longer sounds and rests at the composer's discretion.

PITCH

The use of five different pitches and their octaves in a composition offers the composer a simple but effective means for creating music for two or more pitched instruments or parts. The five pitches, if chosen as follows, will allow for the use of simultaneous pitched sounds without complication.

The standard pentatonic grouping consists of two pitches which are a major second (two half-steps) apart plus three other pitches also a major second apart. The distance between the two-group and the three-group is a minor third or three half-steps. The two-group may be either above or below the three-group. Examples of typical groupings are: CD-FGA, CDE-GA, DE-GAB, and DEF#-AB.

A piece of music may shift from the original five pitches to other pentatonic groupings to provide melodic and harmonic interest and variety. A shift from CD-FGA to CDE-GA, for example, will provide only slight variety because four of the pitches are the same. A shift from CD-FGA to ABC#-EF# will provide greater variety because only one pitch is the same.

SKILLS FOR CYCLE 4.

AURAL

Identify individual pitches of pentatonic groupings in relationship to each other.

Identify differences in duration including sounds and rests of one pulse and two equal sounds or rests per pulse.

Distinguish between imitation and repetition.

DEXTEROUS

In performing

- Produce quarter notes and eighth notes with durational precision.
- Recognize, then imitate musical ideas in performance.
- Refine quality control of sounds.
- Develop techniques for playing pitches of the pentatonic grouping on bells, piano (including finger patterns), and other instruments.
- Sing pitches of the pentatonic groups accurately.
- Play or sing to balance dynamically with other parts.

In conducting

- Continue to refine ability to communicate with performers (facial expression, carriage, arm movement).

TRANSLATIVE

Notate and read pitches of the cycle on a treble staff.

Use G clef.

Use eighth notes and eighth rests.

Place note stems properly.

Use eighth note flags and ligatures correctly.

Use single line for non-pitched instruments.

VOCABULARY

Imitation
Motive
Pentatonic groupings
Eighth note
Eighth rest
Sharp

Five-line staff (treble)
G clef
Stem
Flag
Ligature

C
D
E
B
F#
C#

Sample Strategy

Cycle 4.

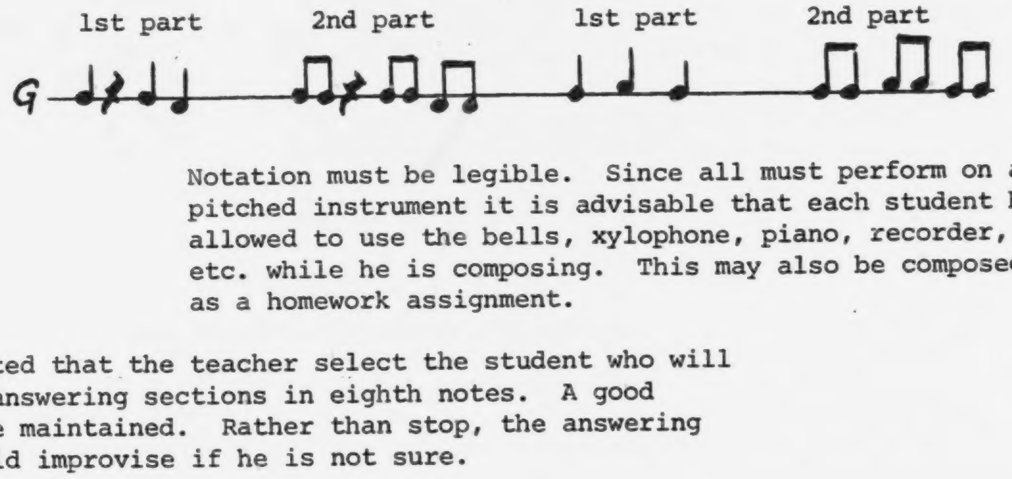
Some sounds and rests are so short that two sounds of the same length can be played in one pulse.

Two students will improvise short rhythmic patterns. Student one will use quarter notes and quarter rests as the underlying pulse. Student two can respond with a pattern using more than one note per pulse.

Following several improvisations identify the use of eighth notes in some or all of the responses. Introduce the symbols for a single eighth note, a pair of eighth notes, and the eighth rest.

Each student will create a composition for two instruments, but write only one part. The other part will be played by memory by another student. In the written part the composer will create three or four patterns using only quarter notes and quarter rests. The other student will repeat each phrase using two eighth notes in place of each quarter note. The composer may experiment with different timbres and dynamics.

Example:



etc.

Notation must be legible. Since all must perform on a pitched instrument it is advisable that each student be allowed to use the bells, xylophone, piano, recorder, etc. while he is composing. This may also be composed as a homework assignment.

It is suggested that the teacher select the student who will perform the answering sections in eighth notes. A good pulse must be maintained. Rather than stop, the answering student should improvise if he is not sure.

Discussion may be focused on the following musical factors: accuracy in answering (but not too extensively), implications of movement, use of rests, dynamic differences, unity, pulse, and timbre contrasts or blends where it is appropriate to comment.

Suggested Listening Examples:
- Short compositions by Warren Benson; GC(S) 4016
- Ave Maria - Stravinsky, Igor; Epic LC 3231
- String Quartet #79 - Haydn, Joseph; Turnabout TV 34012S

Sample Strategy

Cycle 4.

Repetition of a musical idea with some modification is called imitation.

Each student will select an instrument and take his place in a large circle which has been previously arranged by the teacher.

If there are 30 students in the class each student should be assigned a number from 1 to 15. Students with identical numbers will have the responsibility of responding to each other musically. Assign the color red to one of the two numbers and blue to the matching number. Red 5 then will begin when identified and Blue 5 will automatically respond.

The teacher will call the color and number to identify the performing students. The improvisations should move quickly with little or no time in between.

The first improvisations will focus on the repetition of a short musical idea. If Red 5 is identified he will improvise a short musical idea which will then be repeated as exactly as possible by Blue 5. When Blue 5 has completed the repetition a new color and number will be called. Students should attempt to duplicate pitches as well as rhythm, timbral contrasts, dynamics, etc.

When all students have performed a new focus should be established. The next improvisations will involve a longer musical idea. The same procedure may be used. If there is an odd number of students in the class, one of the class members could call the numbers. Students may exchange instruments before the next activity is started.

The third focus for improvisation will be imitation with some changing of the original idea. The same format may be used; however, it should be emphasized that some change in pitch sequence, rhythm, dynamics or timbre is desirable.

Subsequent discussion should center around the imitative devices used by the students.
What devices were used most effectively?
Can you think of any other possibilities using imitation?

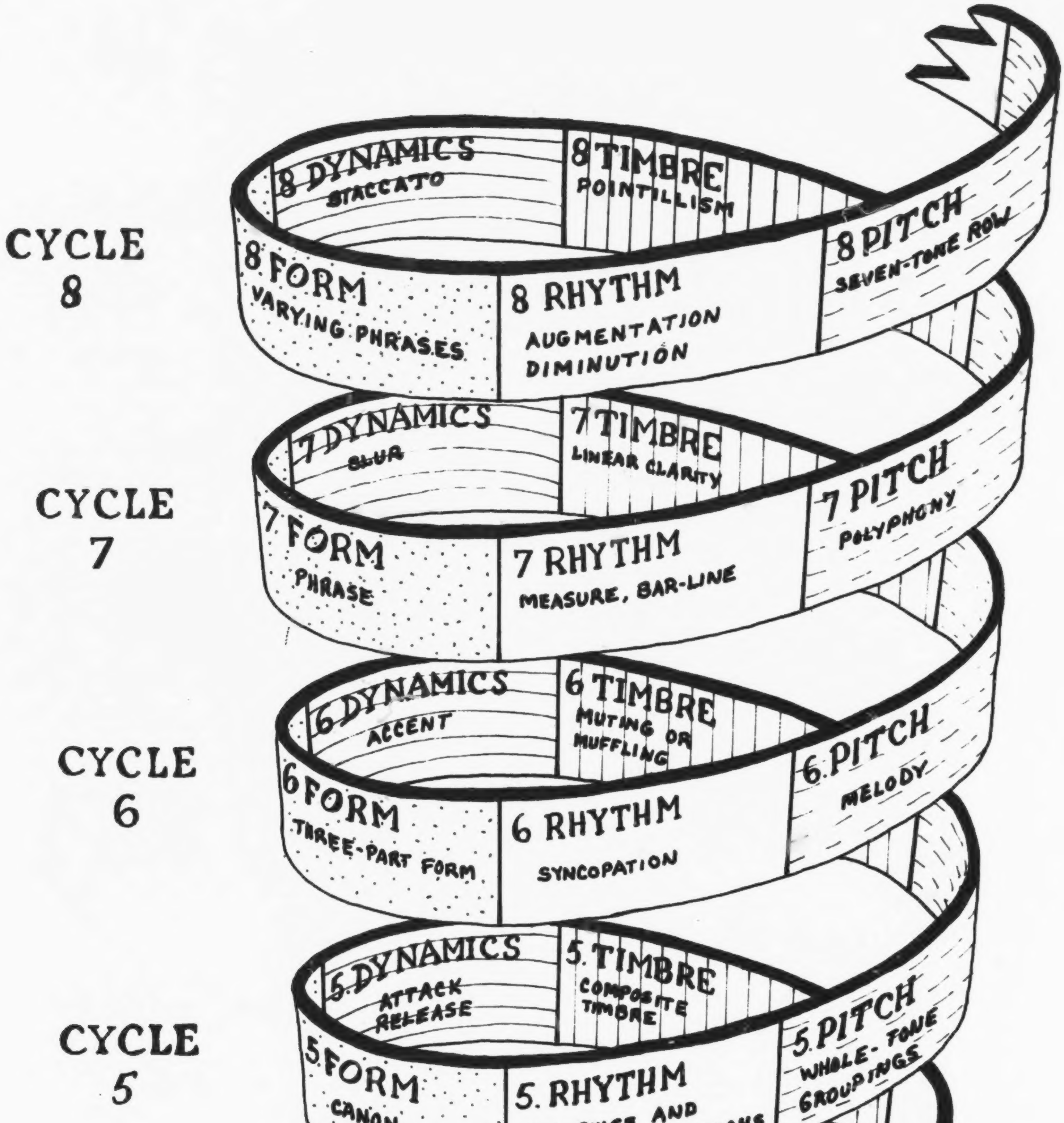
Divide the class into groups of 4 or 5 students. Each group will create a composition for two pitched instruments and two nonpitched instruments. An original musical idea should be used with a variety of imitative devices. The piece should be Moderato and approximately 1 minute in length.

Notation for pitched instruments should appear on a five-line treble staff. Use a single line for nonpitched instruments.

An entire period may be devoted to composing and rehearsing.

All performances should be taped for immediate playback and evaluation. Discussion could be focused on the number of times the musical idea was imitated, the various imitative devices used, the difference between unity and monotony, the complementing or detracting use of timbre, whether interest was maintained, and suggestions for improvements.

Suggested Listening Example:
- Ricercar #2, The Musical Offering - Bach, Johann S.; Vanguard 1092



M.M.C.P. CURRICULUM
CONCEPT SPIRAL

Cycle 5.

TIMBRE

When a single pitch or a series of pitches is produced by two instruments of different timbres, the resulting sound may be a totally new timbre which is not the same as either of its components. (Bells struck simultaneously with temple blocks, piano clusters in the middle range with a cymbal, or clarinet and oboe playing the same pitches.)

FORM

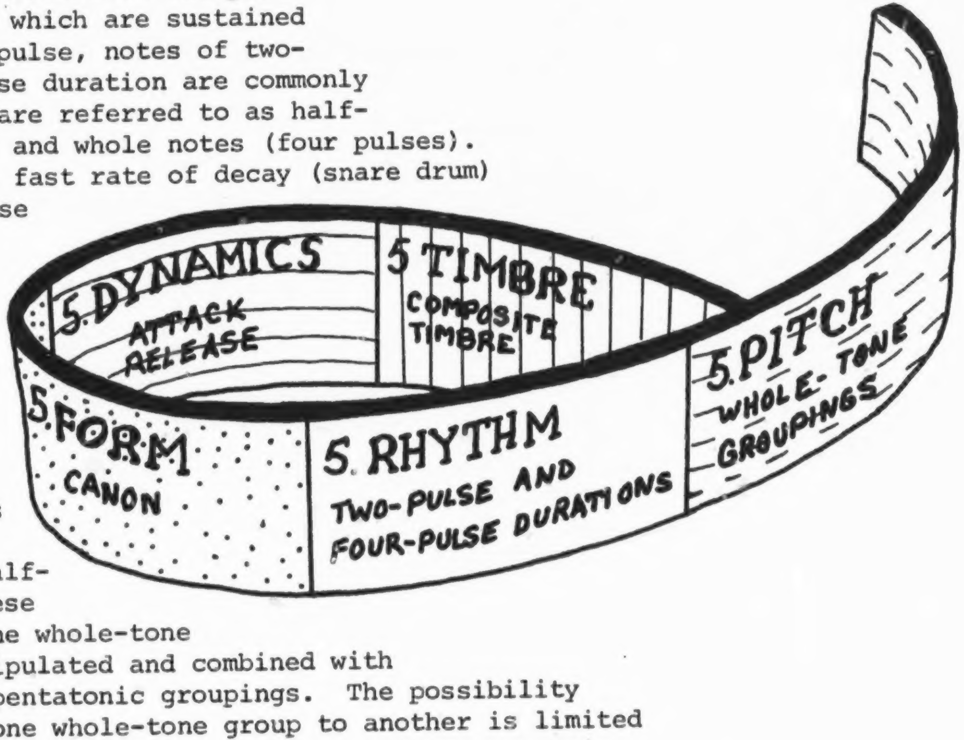
The repetition of a musical thought may begin before the thought itself is completed. This type of overlapping repetition is characteristic of a canon. There may be two or more instruments or voices in canon. After the original version of the musical thought has begun, the succeeding canonic entrances may be of similar or contrasting timbre and dynamics. They may involve the same or different pitch areas. Canons may also be based on rhythm.

DYNAMICS

The way a sound begins is called its attack. The way a sound ends is called its release. Both attacks and releases may occur at any dynamic level. It is the composer's prerogative to determine the dynamic level of all attacks and releases. The total picture of a sound, how it begins, how it continues (does it grow, decay, or remain constant) and how it ends is called the envelope of a sound. Piano sounds begin with a sharp, percussive attack when the hammer strikes the string. They start to decay immediately, but the rate of decay is much slower than that of a plucked violin string. On the other hand, the clarinetist can produce almost any envelope the composer desires.

RHYTHM

In addition to the sounds of one-pulse duration and those which are sustained for only one-half pulse, notes of two-pulse and four-pulse duration are commonly used. Often they are referred to as half-notes (two pulses) and whole notes (four pulses). Some sounds with a fast rate of decay (snare drum) cannot produce these durations with a single attack.



PITCH

Dividing the octave into six equal segments results in pitches which are each a whole-step (two half-steps) apart. These pitches, called the whole-tone scale, can be manipulated and combined with the same ease as pentatonic groupings. The possibility of shifting from one whole-tone group to another is limited because there are only two such groups possible. To gain contrast in a composition, sections based on whole-tone groupings may be alternated with pentatonic groupings.

SKILLS FOR CYCLE 5.

AURAL

Recognize sounds of composite timbres as distinguished from blending or contrasting sounds.

Identify a canon as distinguished from simple repetition.

Identify sounds of two-pulse and four-pulse duration.

Identify the envelope of sounds.

Identify the pitch relationships of whole-tone groupings.

Recognize the aural difference between compositions built on whole-tone groupings and those utilizing pentatonic groupings.

DEXTEROUS

In performing
- Play or sing attacks and releases with precision.
- Produce half notes and whole notes accurately.
- Develop techniques for playing pitches of the whole-tone grouping on bells, piano (including finger patterns), and other instruments.
- Sing pitches of the whole-tone groups accurately.

In conducting
- Indicate precisely attacks and releases where needed.
- Concentrate on preparatory motion.
- Develop use of left hand to indicate dynamic change.

TRANSLATIVE

Notate and read pitches of the whole-tone groupings.

Notate and read attacks and releases with precision.

Notate and read half notes and whole notes and comparable rests.

VOCABULARY

Composite timbre
Canon
Half note
Whole note

Whole-tone scale
Staff line
Staff space

D#
G#
A#

Attack
Release
Envelope
Decay

Sample Strategy

Cycle 5.

The repetition of a musical thought before the thought itself is completed is characteristic of a canon.

Divide the class into groups of 4 or 5 students. The members of each group should select two pitched instruments and two non-pitched instruments.

Using the whole-tone scale, C, D, E, F#, G#, A#, students should create a musical idea and notate it. The musical idea will serve them as a basis for improvisation.

Students should explore the possibilities of repeating the musical idea in a variety of ways. Though the idea will be notated on a five-line treble staff, they may choose to use line forms or some form of devised notation to assist them in recalling the improvisational plan for performance.

Tape all improvisations for immediate playback and evaluation. Discussion should focus on the variety of ways musical ideas were repeated, i.e., use of two or more instruments at a time, use of similar and contrasting timbres, use of dynamics, etc. If an overlapping of the repetitions occurs in any of the improvisations, identify it as a characteristic of the musical form, canon.

Using the same instrumentation each group will create a composition in the form of a canon. The same musical idea used for improvisation may also be used for the composition. Emphasis should be on the overlapping repetitions of the musical idea as it appears in single instruments and combination of instruments.

The entire composition should be notated including tempo, dynamic markings, and indications of unusual timbral effects. A conductor may be used if the group so desires.

All compositions should be taped for playback and evaluation. If transparencies for overhead projector are used for scores, they should also be utilized during the tape playback.

Discussion should focus on the unique characteristics of the canons as they relate to the various parameters of music. A discussion of the scores would be desirable if these are available for the entire class to see.

Suggested Listening Examples:
- "Sumer is Icumen in", about 1240 - History of Music in Sound, Vol. II;
  Oxford University Press, RCA Victor
- Canon for Percussion - Goodman, Saul; Columbia CL 1533

Sample Strategy

Cycle 5.

There may be two or more voices or instruments in canon.

Using the previously composed canons, explore the possibility of combining two or more canons. The canons are to be played simultaneously. However, it is not necessary for both to start or end at the same time.

Volunteer conductors may experiment with any ideas suggested by the class. Some of the following might be considered: Two, three, and finally four groups beginning at the same time, follow and perform their scores exactly as written. The conductor would only cue the entrance of the groups.

Listen to the playback and discuss the overall musical effect of the simultaneous performances. Extend the discussion to include the following questions:
Was each canon audibly clear enough to follow during the group improvisations?
Was each group able to communicate the original character of the piece?

Discuss the problems of maintaining individual differences among groups and experiment with ideas as suggested by members of the class. Tape all experiments for playback and analysis.

The following suggestions could be considered for experimentation:
1. Utilize different areas of the room by trying different arrangements of group placement and individual placement.
2. Experiment with a variety of group and individual entrances and exits.

3. Incorporate periods of silence for some groups or individuals at certain points in the improvisation.
4. Test any number of possibilities dealing with dynamics, i.e. highlighting one group at a time, highlighting individual instruments, using the entire group for both extremes in the dynamic range, etc.

Optional Assignment:

Plan an improvisation using the entire class. Ideas for incorporating the canons into the improvisation may be drawn from today's experimentation or may be entirely new. All conducting cues should be practiced in front of a mirror at home. Any unusual group arrangements for performance should be outlined on paper.

Cycle 6.

TIMBRE

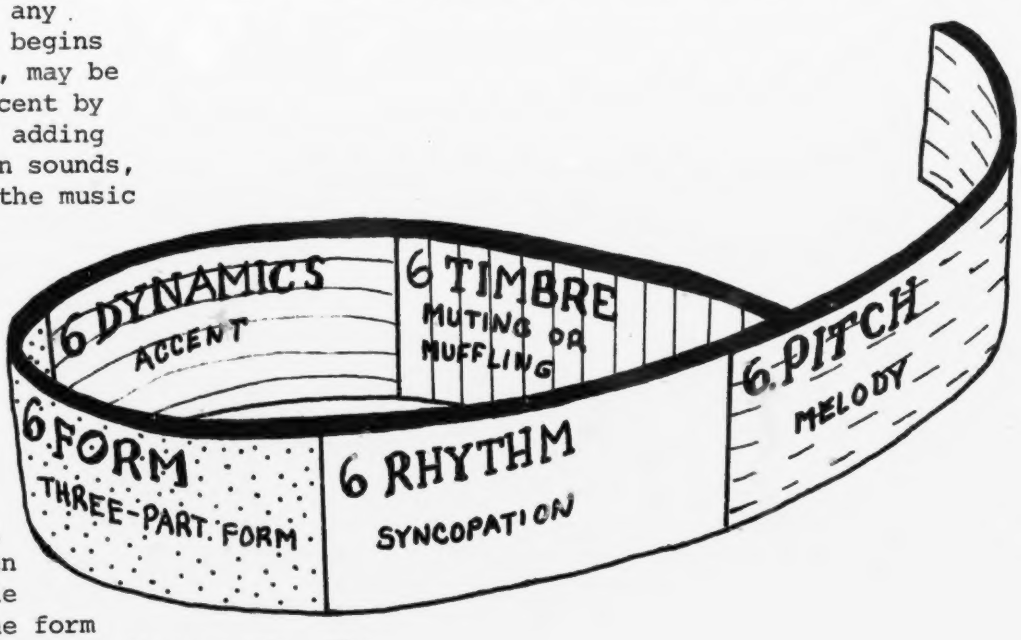
The normal resonance of a sound-producing agent may be decreased through the use of dampers (mutes attached to the bridge of stringed instruments or inserted into the bells of brass instruments). Percussive sounds may be changed by altering the striking agent. (Bells struck with a metal mallet sound harsh; when struck with a soft mallet they sound mellow.) Blend may be improved by muting too prominent sounds.

DYNAMICS

Pulse carries with it the concept of accent. Sounds which begin on a pulse are reinforced by the stress of the pulse and are therefore somewhat louder. However, any sound, whether it begins on a pulse or not, may be designated for accent by the composer. By adding accents to certain sounds, the character of the music can be changed.

PITCH

Melody is a coherent series of pitched sounds which serve a predominant role in many compositions. The pitches used may be drawn from a narrow or a wide pitch area. They may or may not incorporate words. Melodies may sound alone or may be combined with other musical factors. They may include repetition, imitation, or motive, and they may be the basis for an entire composition or only a part of it.



FORM

In a composition, when a musical statement, idea, or section is followed by a different musical statement and then by a return to the original idea, the form is said to be ternary or three-part. The return, which may be a modification rather than repetition of the original section, is the significant factor. Each section of this ABA form may be short or long and need not be the same length as any other section.

RHYTHM

Sounds which begin before a pulse and continue through it or through following pulses are said to be syncopated. The most common syncopation figure is short-long-short (a short sound on a pulse, a longer sound which begins before the next pulse and continues through, then another short sound just before the third pulse). The figure may be varied by adding more than one longer sound after the initial short one or by eliminating either the final short sound or the initial short sound. The effect of syncopation is that of working against the pulse. The longer sounds, when used in this way, give the impression of setting up their own new pulse but are only really effective if the real pulse continues to be felt.

SKILLS FOR CYCLE 6.

AURAL

Identify muted sounds of instruments used in class.

Recognize notes which receive an accent.

Identify three-part form: The original statement or idea, the different statement, and the return to the original.

Identify rhythmical figures which are syncopated.

DEXTEROUS

In performing

Produce accents when they are indicated in the music or by the conductor.

Play and sing syncopation figures with attention to real pulse.

In conducting

Indicate real pulse in syncopation.

Gain control of conducting techniques sufficiently to indicate accents in situations where the performers require specific directions from the conductor.

TRANSLATIVE

Notate and read syncopation using quarter- and eighth-notes.

Indicate sounds of particular stress with accents.

VOCABULARY

Mute
Accent
Three-part
Ternary
Syncopation
Tie
Melody
Open sounds
Largo
Presto

Sample Strategy

Cycle 6.

When a musical statement is followed by a different musical idea or section and then by a return to the original statement, the form is said to be ternary or three-part.

Each group of 4 or 5 students will plan an improvisation for a dance. It should be in three parts, Lento then Allegro and back to Lento. Instrumentation should consist of two pitched instruments and two non-pitched instruments.

After an appropriate amount of time for planning and some rehearsal, all improvisations should be performed for the class. A dancer may perform with the music.

Tape the improvisation for quick reference during the ensuing discussion. Attention should be focused on the various contrasts that were achieved between the Lento and Allegro sections.

In addition, a comparative analysis to determine similarities and differences between the two Lento sections should be made. Considerations for some leading questions might be the following:
Other than tempo, how did the Lento sections differ from the Allegro section in rhythm - timbre - dynamics - pitch?
Was melody an important factor in either of the sections?
If melodic material was not used, what musical factors played a predominant role?
How did the second Lento section differ from the first in timbre - dynamics - pitch - rhythm?
What were the outstanding characteristics in the most satisfying improvisations?
Generally, how could the improvisations be improved?

Experiment, through improvisation, with any suggestions or musical ideas offered by the students.

Listen to recorded examples of compositions in three-part or ternary form for further insights and stimulation of musical ideas.

In groups of 4 or 5, students will create a composition in ternary form for a dance. There will be two contrasting musical sections with a repetition of the first section at the end. The repetition of the original idea may be modified as the composers see fit. Length of the uninterrupted sections will be determined by the group.

At least one entire period could be devoted to composition and rehearsal. Scores should contain as much detail as possible.

Tape all compositions for immediate playback and evaluation. Focus analysis and discussion in the following steps:

Analytical - List all pertinent musical factors relating to a single composition. Discuss the outstanding characteristics as they relate to the form.

Judicial - Discuss the most appealing aspects of the composition. Analyze the appealing nature and relate it to the analytical perceptions made in the previous step.

Creative - Discuss possible extensions of the piece:
Could it be elaborated into a longer piece?
How?
Did you get any musical ideas as a result of this piece?
How could the piece be improved?

Suggested Listening Examples:
- Any short listening examples in ternary form would be appropriate.

Sample Strategy

Cycle 6.

By adding accents to certain sounds, the character of the music can be changed.

Each group of 4 or 5 students will plan an improvisation that describes the imagined feeling of floating through space. Teacher or students may determine the selection of instruments to be used. The objective is to create a piece of music which has no audible points of stress or dynamic accent.

Following an appropriate amount of time for planning and rehearsal, each group should perform for the class. If transparencies are available, use the overhead projector to view scores during performances.

Tape all improvisations for playback and evaluation. Discussion should focus on the musical factors that contributed to the character of the piece in terms of pitch, duration, dynamics, and timbre. The discussion could be extended with the following questions:
Are sudden jerks of sounds or motions appropriate in maintaining the character of this piece?
What were some of the difficulties in performing this piece?

Using the same musical material, each group will change the basic character of the piece. As opposed to the feeling of floating in space imagine yourself as a bowling ball dropping to the floor, rolling down the alley and hitting some of the pins - all of the pins - none of the pins.

Introduce the accent symbol as a notational device for stressed sounds.

When students have completed their compositional plans and have had time to rehearse, all compositions should be performed for the class.

Tape all performances for playback and evaluation. Once again, focus discussion on the musical factors that contributed to the character of the piece in terms of pitch, duration, dynamics, and timbre. Extend the discussion with the following questions:
What outstanding musical factor contributed to the change of character in this piece?
What were some of the difficulties in using the same music for a piece of a different nature?

Focus attention on the various uses of accents in the listening examples.

Suggested Listening Examples:
- Pictures at an Exhibition, Ballet of Unhatched Chicks - Moussorgsky, Modest; Columbia ML 4700
- Seven Studies on Themes of Paul Klee, Twittering Machine - Schuller, Gunther; Victor LM/LSC2879

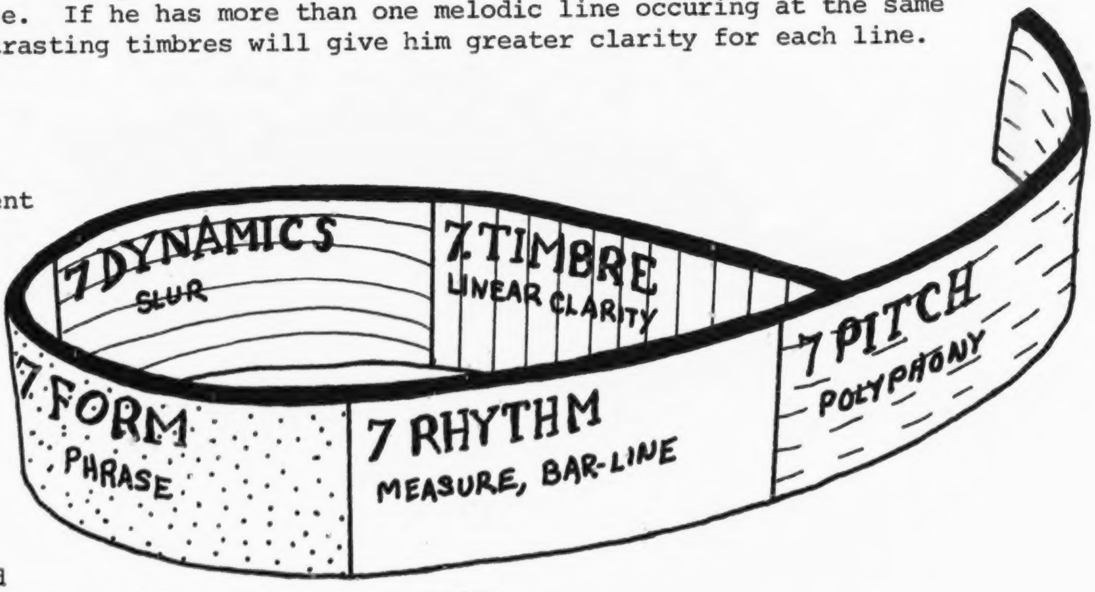
Cycle 7.

TIMBRE

The composer may wish to give prominence to certain musical lines or melodic situations in a composition. If his timbral resources are similar in sound, he can best accomplish such desired clarity by separating the line to be stressed from the pitch area of the other sounds. If he has several different timbres available, choosing the most penetrating one for the line to be highlighted will accomplish his purpose. If he has more than one melodic line occuring at the same time, contrasting timbres will give him greater clarity for each line.

DYNAMICS

Groups of different pitches which, after an initial attack, move from pitch to pitch without a break, without separate attacks for succeeding pitches, are said to be slurred. Sounds which are connected by slurs seem more closely bound together than grouped sounds which are separated. Slurs are used when more than one pitch is to be sung to a single syllable, or smoothness of sound is desired. They may connect both small or large groups of pitches.



FORM

Musical phrases are often compared with the clauses and phrases of sentence structure. They represent ideas or thoughts expressed musically through unified longer groups of pitches or rhythmic factors. Phrases are longer than motives. Many, in fact, incorporate one or more motives in their structure. A melody will often contain a group of phrases. Phrases may be of varying length.

PITCH

Two or more different melodies may occur at the same time. They may begin and end together or be of differing lengths, some beginning after others have started and continuing after they have ended. Each melodic line should be strong enough to function as a melody if heard alone. In combining melodies, the composer will find that lines which overlap have less clarity, that lines which meet on the same pitch change timbre with each meeting, and that if they continue together on the same pitches, they lose their individual identity.

RHYTHM

Groups of pulses may be separated from each other by bar-lines. The resulting unit which appears between bar-lines is called a measure. The separation is made and the bar-line positioned so that the first pulse in each measure will receive the predominant natural accent, one which is stronger than other natural accents in the measure.

SKILLS FOR CYCLE 7.

AURAL

Identify musical phrases.

Identify sounds which are slurred from those articulated differently.

Aurally recognize the logical positioning of bar-lines in pieces of consistent meter.

Recognize the basic aural characteristics of simple polyphony.

DEXTEROUS

In performing

Follow the composer's indications of phrasing and slurring accurately.

In singing and instrumental performance maintain accuracy in pitch, dynamics and rhythm of line when performing simple polyphony.

In conducting

Cue in beginnings and endings of separate melodic lines.

Develop basic beat patterns for 4 and 3 beat measures.

TRANSLATIVE

Notate and read phrasings and slurrings.

Notate and read bar-lines.

Achieve vertical alignment in scoring rhythmically independent parts.

VOCABULARY

Slur
Phrase
Measure
Bar-line
Flat

Polyphony
Articulation
Beat pattern
Accompaniment

Enharmonic spelling:
C# = D♭
D# = E♭
F# = G♭
G# = A♭
A# = B♭

Sample Strategy

Cycle 7.

Two or more different melodies may occur at the same time.

Select five or six pitches to be used as a basis for melodic improvisation. A pentatonic or whole tone scale could be used for early explorations in combining two or more melodies.

Prior to any group work each student should write a melody using the pitches designated by the teacher. Pitched instruments should be available in the room for individual exploration and testing of ideas.

Divide the class into groups of 4 or 5 students. Each group will plan an improvisation using the melodies composed earlier. It should be suggested that the students experiment with their melodic material in the steps listed below so that they can evaluate the effect of their musical judgments.

The following format might be suggested to assist students in group work.

1. Listen to all the melodies available.
   How do they differ in length?
   Experiment by combining melodies of different lengths and similar lengths.

2. Listen to the melodies and analyze their individual directions.
   Do they move in an ascending direction, descending direction, or is there an equal balance of the two?

3. Identify a characteristic feature in each of the melodies.
   Discuss the possible uses of this feature and ways in which it might be highlighted.

4. Plan an improvisation using the melodies available in the group.
   A conductor may be used or signals such as head nods and facial expressions could be established by group members.

After an appropriate amount of time for experimentation, planning and rehearsing, the improvisations can be performed for the class.

All performances should be taped for immediate playback and evaluation. Analysis should be focused on outstanding characteristics which affected the total musical result.

Timbre - Did the timbral resources in the group allow for clarity of individual lines?
If not, was any compensation made?

Dynamics - Were dynamics used to highlight a single line at any point?
What were other effective uses of dynamics?

Duration - Was there a feeling of motion in this piece?
Was there any feeling of unity and variety in the total rhythmic structure?

Pitch - What was the effect of combining melodies of varying lengths?
Was there contrast in the directions of combined melodic lines?

Form - Were individual phrases evident in the performance?
Was any overall form evident?

Following the class analysis each group should revise, modify or extend the improvisational plan to include some new musical factors.

Questions used for the evaluation may be drawn upon to focus on suggested listening examples.

Suggested Listening Examples:

- Concerto for Violin, Oboe, Strings and Continuo in D minor - Bach, Johann S.; Archive ARC 3221
- Dialogues for Piano and Two Loudspeakers - Carlos, Walter; Turnabout TV 4004

Sample Strategy

Cycle 7.

A melody may be comprised of a
series of phrases.

Using the notes of a pentatonic grouping beginning on C, each student should privately vocally improvise until he has an 11- to 15-note phrase which he finds satisfying. In this improvisation he may assist himself with a pitched instrument if he wishes. He should then notate the phrase on a G clef. Bar-lines, dynamic marks, articulation marks, and tempo indications should be included.

Each student should write a text of his own choice to go with his phrase. In this process the phrase may be readjusted as necessary for integration of text and music.

Students should now pair up to perform each phrase for the rest of the class. While one student sings his phrase, his partner may accompany him, as directed by the composer, on a non-pitched percussion instrument. The composer may play a pitched percussion instrument while singing if he wishes.

After each performance, students in the class may make recommendations to the composer about form, text, accompaniment, or any other musical factors relative to the completion of the composition.

Each student should now complete his composition by adding 2 to 4 more phrases. When each composition is finished the composer and his partner may rehearse and privately tape record the composition for future playback.

After 5 to 7 compositions have been recorded, the teacher should play them for the class. This may provide some ideas and fresh alternatives for others in the class. If students wish to comment they may do so, but comments may not be needed. This system of private taping and the playing of a group of compositions should continue until all compositions have been performed.

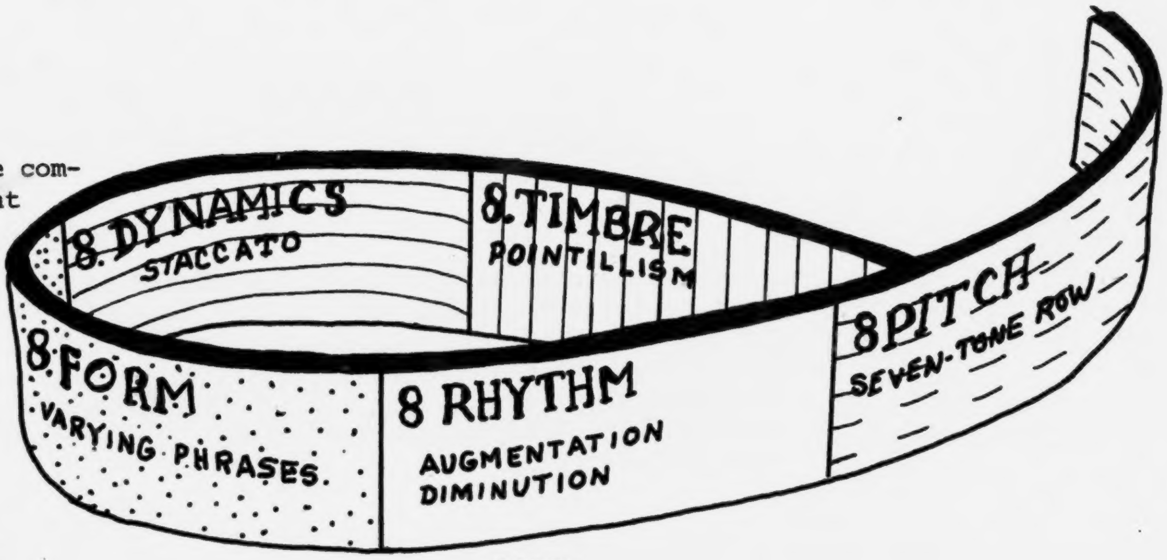
When students have finished their compositions and taping, they may move on to other areas of the Lab or to a new strategy.

Possible Extensions:

The strategy may continue as a whole class cantata utilizing some of these melodies plus instrumental sections. It may also move to a large polyphonic composition for 3 or 4 voice parts, each using the same melody (each part grouped separately). The various voice parts would be combined at the discretion of a student conductor-composer. He may use separate entrances, canon, a partial melody, dynamic effects, etc. improvisationally.

Suggested Listening Examples:
- Bringing it Back Home - Dylan, Bob; Columbia CS9128
- Something Special - Ives, Burl; Decca (7) 4789
- Winterreise - Schubert, Franz; 2 Angel S3640

Cycle 8.



TIMBRE

Melodies are commonly thought of as being most effective when the same instruments or voices perform them throughout their total length. In pointillism, however, melodies may be given a fresh appeal. Melodic fragments are passed from one timbre source to others, usually those of a markedly different quality. The fragments themselves are often quite short, occasionally they are single tones. Pointillism is particularly appropriate with music constructed from a row. The timbral changes contribute to the contrast, shape, and interest of the musical line.

DYNAMICS

Short staccato sounds have both a precise attack and a precise release. They are detached from following sounds by their sharp release and by short silences which follow. Staccato is usually reserved for notes of one pulse or less.

PITCH

One twentieth century contribution to pitch organization is the tone-row. Inherent in the concept of the tone-row is a predetermined order of pitches which is maintained throughout the composition. In order to avoid some of the complexities of tone-row composition, only seven different pitches will be used initially. The composer chooses the pitches and their order for himself. Once the order is established, he is ready to begin composing within the following framework: any pitch may be repeated once or many times in succession, a pitch may be used in any octave, a phrase may end on any pitch but hardly ever on the last pitch of the row. Whenever this last pitch is used, the next pitch is the first one of the row.

FORM

The musical material of a phrase may be changed when the phrase is used again. Certain pitches may be lengthened or shortened, raised or lowered, added or deleted, to give the new phrase variety. Indeed, the entire phrase may be of a different length.

RHYTHM

Augmentation is the proportionate lengthening of all durational aspects of a musical idea. The rhythmic figure of two eighth-notes followed by a quarter-note may become two quarter-notes followed by a half-note or two half-notes followed by a whole note. Diminution is the shortening of all durational aspects of a musical idea. A whole note followed by two half-notes may become a half-note followed by two quarter-notes or a quarter-note followed by two eighth-notes. Both long and short musical ideas may be either augmented or diminished.

SKILLS FOR CYCLE 8.

AURAL

Distinguish between notes of varying durations.

Identify the sounds, both muted and open, of all of the instruments used in class and heard in reference recordings.

Identify phrases.

DEXTEROUS

In performing

Perform staccato notes accurately at a variety of tempos. All students should be able to perform staccato on the piano and gain staccato techniques on percussion instruments by means of dampening.

Maintain a consistent tempo.

Develop technical facility on some instrument to produce notes required for seven-tone row.

In conducting

Develop abilities to shape phrases as indicated in the music.

Learn beat patterns for 2 beat and 5 beat measures.

TRANSLATIVE

Refine score writing and reading as demanded by pointillism.

Learn usable ranges (of classroom performers) for all instruments used in compositions.

VOCABULARY

Pointillism
Time signature
Augmentation
Diminution
Staccato
Dampen
Tone row
Beat pattern
Meter
Resonance
Range

Sample Strategy

Cycle 8.

In a composition built on a prescribed series of pitches, the manipulation of other elements brings variety, contrast, and meaning.

The teacher should write a 7-tone row on the board. When the students have copied the row, 3 or 4 students should improvise on the row attempting to achieve variety through the creative use of rhythm, dynamics, octave transposition, and rests.

After the improvisational demonstrations, a recording of a serial composition for a small chamber ensemble should be played as a reference for the class. Each student should identify two characteristics of serial music which he wishes to use in his own composing.

The class should be divided into groups of five students to form ensembles of three pitched instruments and two non-pitched percussion. Using the row prepared by the teacher and the characteristics the students have previously identified, each group should construct a composition of 1- to 2-minute duration. All musical factors should be first improvisationally explored and then accurately notated.

Since the process of composing, notating and rehearsing is rather complicated, adequate time must be allowed for the students to feel that they are satisfied with their creative work. Because the time required by each group will vary considerably, each group may record its own work when completed and pass judgment on its own achievement. If they wish to revise the composition, time should be allowed for this. After all groups have completed their assignment, a performance for the class is in order.

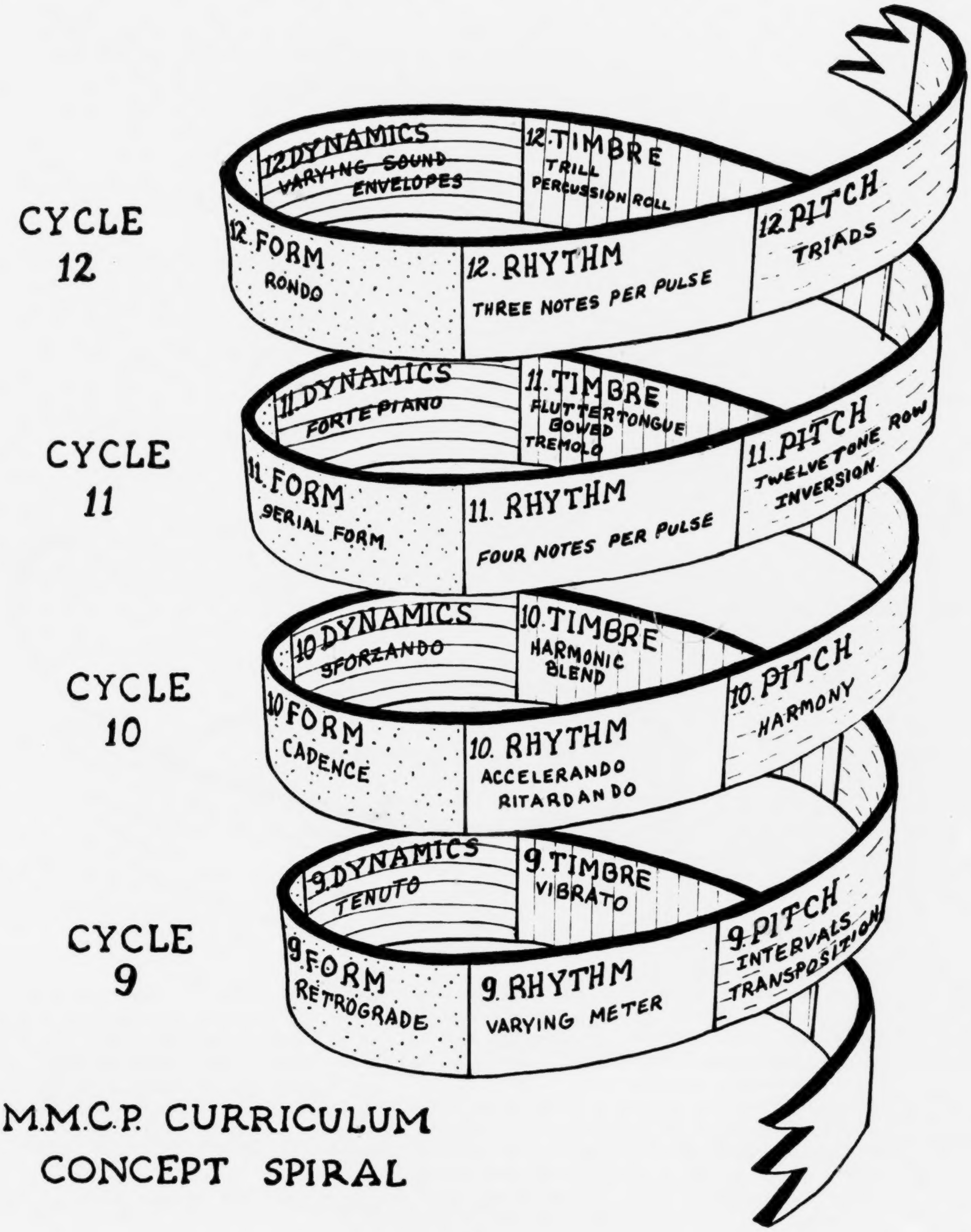
In the discussion of compositions, the focus should be on the variety, unity and identified characteristics. Was the total aural nature of the piece appropriate in terms of the reference recordings? Did the composition have a sense of unity? How was this achieved? How was variety handled?

Possible Extensions:

Play the tape of these compositions for the art teacher and the english teacher. What suggestions do they have?

Include some of these row compositions along with others on a student composition recital for the parents. Suggest recordings that the parents may purchase.

Suggested Listening Examples:
- Music for Brass Quintet - Schuller, Gunther; CRI 144
- Trio - Ives, Charles; Decca DL710126
- Marteau sans Maître - Boulez, Pierre; Turnabout 4081



M.M.C.P. CURRICULUM
CONCEPT SPIRAL

Cycle 9.

TIMBRE

Musical tones undergo a timbral change if they are performed vibrato rather than "straight". Vibrato itself is a slight but recurring pitch fluctuation. It adds warmth to the tone of both instruments and mature singing voices. It is usually used by string players, frequently by woodwind players and brass players.

DYNAMICS

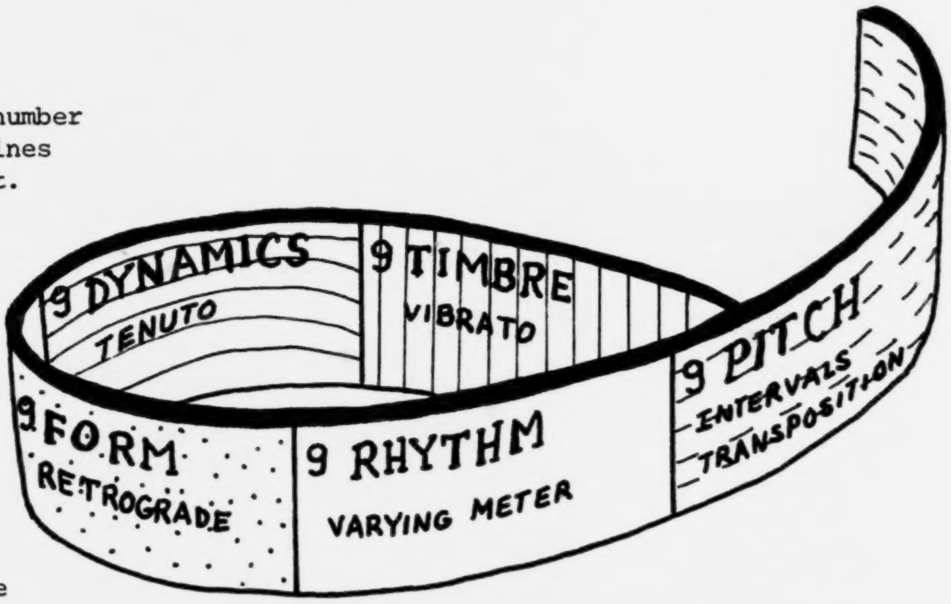
Individual sounds which follow each other with separate, light attacks but without a release before the next attack flow together smoothly with almost the effect of slurring. Such sounds are played tenuto. They continue through to the beginning of the next sound.

FORM

Tone-rows are also used in retrograde (R) order. The last tone in the row becomes the first, the next to the last becomes the second, and so on. Retrograde order may begin a composition, if the composer desires. It may be used at any point in a composition when the previous order has been completed. If it follows the regular order of the original (O) row, the last note of the row becomes the first of the retrograde and may or may not be repeated, at the composer's discretion.

RHYTHM

In measured music, the number of pulses between bar-lines need not remain constant. Succeeding measures may shift from four to three to five to six pulse, for example. The choice of the number of pulses in each measure is up to the composer.



PITCH

Intervals are the distances between pitches. They are always measured from lower pitches to higher pitches. One system of measurement limits itself to the number of half-steps between two pitches. Thus, the lower pitch becomes zero, the half-step above it becomes one, the second half-step becomes two, and so on until the twelfth half-step equals the octave and becomes zero again. (c to e is an interval of four; d to a# is an interval of eight.) Tone-rows and their retrogrades may be transposed (moved into other pitch areas) distances of from one to eleven half-steps above the original pitches. A row that begins a, d, b in the original row (O) would begin g, c, a when raised ten half-steps (O 10) or d, g, e when raised five half-steps (O 5). In row usage, any transposition may follow another transposition, the original, or any retrograde.

SKILLS FOR CYCLE 9.

AURAL

Identify the natural grouping of pulses in order to determine logical measure divisions in pieces of varying meter.

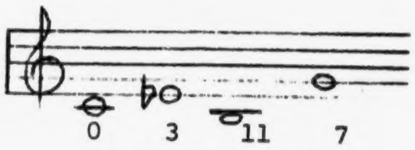
Recognize a half-step regardless of its pitch area.

Gain some familiarity with approximate distance of intervals made up of more than one half-step.

DEXTEROUS

In performing

Sing the notes of the row while they are being performed by an instrument by using the numerical indication of the interval.



Gain the technique of vibrato performance on the major instrument, if the student has one.

Both instrumentally (on instruments which sustain) and vocally, perform in a tenuto fashion as contrasted with staccato.

In conducting

Refine abilities to control beat patterns in compositions of varying meter.

TRANSLATIVE

Transpose notation to accommodate students in class who play clarinet or trumpet by copying individual parts an interval of 2 higher than concert pitch.

VOCABULARY

Concert pitch
Vibrato
Tenuto

Retrograde
Intervals
Transposition

Half-step
Pitch area

Sample Strategy

Cycle 9.

Program Music

Each student should construct a row of 7 pitches which he will later use in a group composition. He may begin with a pencil and staff, but he should play his row several times and revise it until he is aurally satisfied with the succession of pitches.

Students should choose groups of three instrumentalists and one conductor. The instruments should all be pitched and diversified in pitch range and timbre. For this programmatic strategy, each group should select one comic strip (i.e. Pogo, Lil' Abner, etc.) for which they will write aurally descriptive music.

In composing, the emphasis should be on music which captures the mood and spirit of each of the pictures which comprise the strip. This will result in a piece with 3, 4, or 5 sections of somewhat different character. A rhythmic motif may be used if helpful to establish the sequence of ideas. (Remember the motifs may be augmented, diminished, and otherwise varied.) Staccato, tenuto, vibrato, straight sounds, and other articulation ideas may prove helpful. In the music each student will use only the pitches of his own row, both O and R. The piece may be totally notated, or only the rows may be written and devised notation used for general compositional plans. However, each group should be able to repeat performances fairly accurately.

For performances transparencies should be made of each comic strip and projected while each composition is performed. All performances should be taped for future reference. In discussions, the musicians of each group should explain the musical ideas they employed and the particular problems they faced. Other students may offer alternatives for revisions.

Possible Extensions:

Each group would create its own strategy dealing with similar types of musical considerations in a different programmatic setting.

What would happen if readers were used for comic strip texts? How would this affect the music?

Suggested Listening Examples:
- Six pieces for Orchestra - Webern, Anton; Columbia K4L-232
- Seven Studies on Themes of Paul Klee - Schuller, Gunther; Victor LSC2879

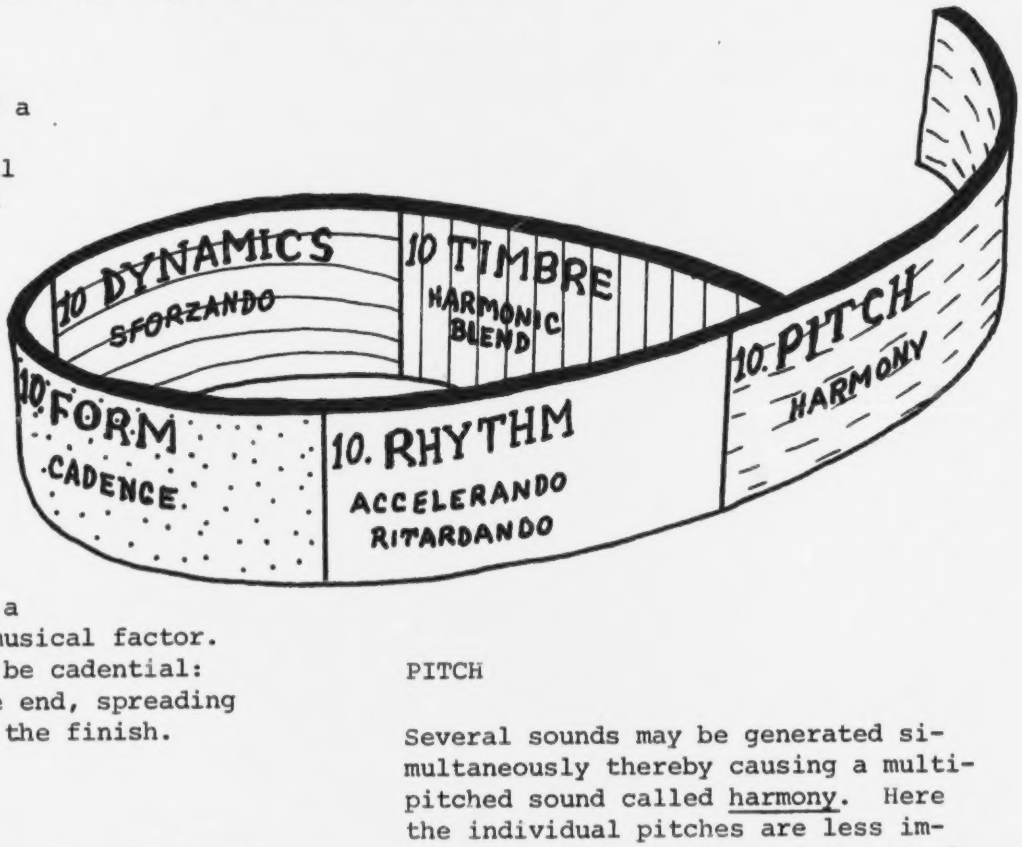
Cycle 10.

TIMBRE

In polyphonic music, contrasting timbres are desirable to achieve clear individual melodic lines. In harmonic music, however, similar timbres are preferable for the voices or instruments which are accompanying the melody in order to emphasize the unity of the sound. The timbre of the blending harmonies may be in contrast to the timbre of the melody to give it additional prominence.

DYNAMICS

Sforzando (sfz) is the loudest accent possible. It is the sharpest attack the performer can produce. It is used with some discretion by the composer and reserved for real climactic effects or decidedly emphasized instances.



FORM

The termination of a musical idea, the ending of a musical phrase is called a cadence. Some cadences imply that there is more to follow, others bring the musical idea to a complete close. Dying away, thinning out, slowing down, coming to rest, describe many cadential effects and imply a decrease of some musical factor. Increase may also be cadential: building up to the end, spreading out, or racing to the finish.

RHYTHM

A gradual increase in pulse speed is called accelerando. Gradual decrease in pulse speed is called ritardando. Abbreviations for the two terms are frequently used: accel. or rit. Such tempo changes are frequently used to amplify the expressiveness of the music.

PITCH

Several sounds may be generated simultaneously thereby causing a multi-pitched sound called harmony. Here the individual pitches are less important than the effect of the total sound. Harmony is used more to create a setting than to create counterbalancing linear relationships as heard in polyphony. Two, three, or more pitches of the seven-tone row or the five- and six-note groupings may be played together to create blocks of sound which have their own individuality.

SKILLS FOR CYCLE 10.

AURAL

Identify differences between harmonic and polyphonic music.

Identify aural factors of the cadence (as described in the spiral) in student compositions and reference recordings.

Gain awareness of blending qualities in harmonic groupings.

DEXTEROUS

In performing

Using interval numbers, sing at least five different linear intervals of the students' choice.

Perform accelerando and ritardando, as indicated.

On the piano, develop simple techniques which will allow for improvisation on the row, including the grouping of adjacent notes of the row for harmonic use.

The student should be able to both attack and release notes as indicated by the music.

In conducting

Effectively conduct accelerando and ritardando while maintaining beat patterns.

TRANSLATIVE

Read and notate using the F clef.

VOCABULARY

Harmony
Accelerando - accel.
Ritardando - rit.
Contrapuntal

Cadence
Sforzando
F clef
Vivace

Adagio
Chord
Octave transposition

Sample Strategy

Cycle 10.

In harmony several pitched sounds merge to form a single block of sound. The total effect of this block of sound may be varied by spacing and voicing and other musical considerations.

Students should work together in groups of eight, allowing for seven players and one conductor. Each group should use the best timbral blend possible (mutes may be of some advantage in achieving a blend). Each player of a group should be assigned one note of a 7-note row previously prepared by the students, and they should be seated in the order of succession of pitches of that row.

This strategy involves improvisational experimentation in the combining of sounds of the row. Available for experimentation are spacing factors, octave transposition, dynamics, articulation possibilities, and a variety of durational and pitch combinations as long as the sequence of the row is maintained. For examples of possibilities, the first four notes of the row may be played

	3	1	2	4
Right	1		1	
hand	2			2
		2		
Left		3	4	1
hand	4	4	3	3

Three notes may be released while one is sustained; pitches 1, 2, 3 played simultaneously may be followed by 4, 5 then by 5, 6, 7, 1, 2 also played simultaneously in a variety of octave displacements and dynamic configurations, etc. The objective is to achieve a short composition in which there is a constantly changing color of sound which has its own sense of movement and unity.

Each student in a group should have his own opportunity to conduct and experiment.

There need not be any performance for the whole class, taping of individual experiments or formal discussions. However, the teacher should be available to each group and when a particularly exciting musical idea arises, it may be demonstrated for the entire class as circumstances allow.

A major consideration of this strategy is the need for a relatively isolated area for each group. This strategy certainly cannot be used with everyone in one room. Practice rooms or other unoccupied rooms will be necessary if the students are to gain musical insight from experimentation with the kaleidoscope of harmonic sounds.

Suggested Listening Examples:
- Six Pieces for Orchestra - Webern, Anton; Columbia K4L232
- Woodwind Quintet - Carter, Elliot; Victor LSC6167

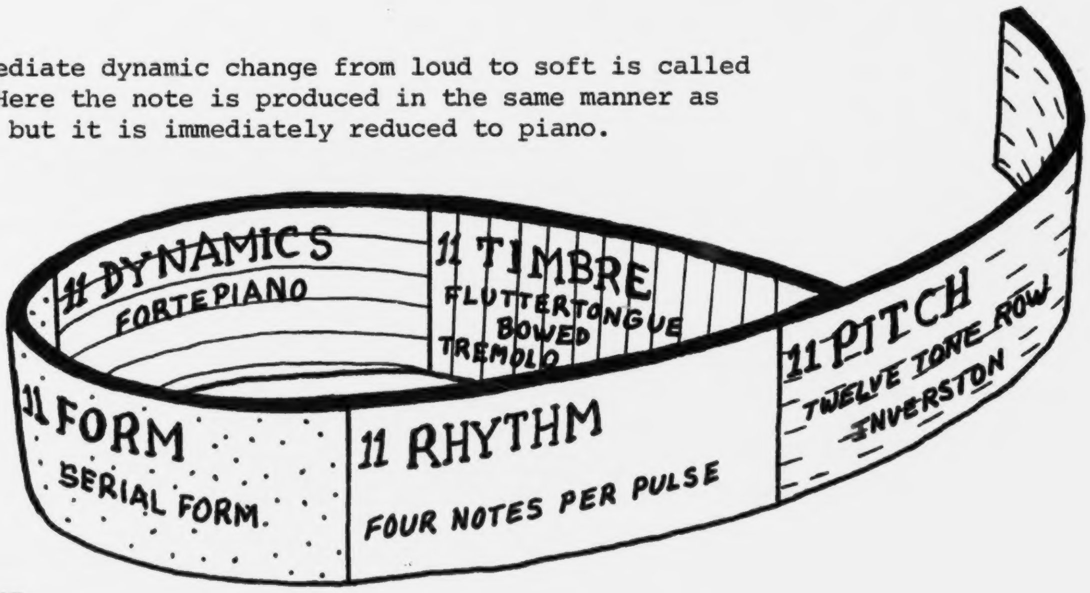
Cycle 11.

TIMBRE

The rapid interruption of a musical sound is sometimes desired by the composer. Wind instruments produce this timbral change by flutter tonguing, stringed instruments by the bowed tremolo. The aural effect is often dramatic on some instruments but shimmering on others.

DYNAMICS

A sudden, immediate dynamic change from loud to soft is called fortepiano. Here the note is produced in the same manner as the sforzando but it is immediately reduced to piano.



FORM

In structure, tone-row music unfolds in much the same way as the pitches of the row itself. Going on to something new is far more characteristic than returning to something old. While repetition seldom occurs, a composer will often imitate a small musical idea based on pitch direction, dynamics, or durational factors. Aural unity is achieved through the pitch characteristics of the row rather than through the form of the composition. Abrupt changes of pitch register, dynamic level, timbre, or tempo achieve the diversity which is the essence of tone-row music.

RHYTHM

Pulses may be subdivided into four equal parts. If a quarter-note represents a pulse, four successive sixteenth notes will have the same total elapsed duration as the quarter-note. The four sixteenths tied together will sound exactly the same as the quarter-note.

PITCH

Many twentieth century composers use a row made up of twelve different pitches, one for each of the half-steps that occur between octaves. All of the factors previously described for the seven-tone row are valid for the twelve-tone row. Row inversion (I) is, strictly speaking, a change in direction of each melodic step or skip of the row (O) itself. If the row begins on a, skips up to c, then down to g#, the inversion would be a, down to f#, then up to a#. This inversion is sometimes more freely interpreted to be any a, followed by any f# and any a# thus eliminating the reversed direction implicit in the strict application of the term "inversion". The accurate determination of the inverted pitches themselves can be achieved mathematically by labeling the first note of the row zero. Each succeeding pitch is then labeled with the number representing the half-step distance above the first pitch. In the example above, a, c, g# would be labeled 0, 3, 11. The inversion numbers are determined by subtracting each row number from twelve (which is also zero): 0, 9, 1 or a, f#, a#.

SKILLS FOR CYCLE 11.

AURAL

Identify those idiomatic factors which are characteristic of serial music and through this become acquainted with the aural nature of different serial compositions.

Continue the refinement of recognition of the sound qualities of linear intervals.

DEXTEROUS

In performing
Sing at least seven intervals of the students' choice.

For students who play appropriate instruments, both flutter tongue and bowed tremolo should be mastered.

Perform fortepiano articulation on instruments and in singing.

Perform sixteenth-notes when four are grouped together.

Refine techniques on piano and on the major instrument (if they have one) to meet the new demands of the twelve-tone row.

TRANSLATIVE

Notate and read sixteenth-notes when four are grouped in one pulse.

Make use of ledger lines as needed by available instruments in the classroom.

VOCABULARY

Flutter tongue
Bowed tremolo
Fortepiano
Sixteenth-notes
Register

Twelve-tone
Inversion
Ledger lines
Aural unity

Sample Strategy

Cycle 11.

Since this strategy calls for individual composition, rehearsal and performance, much of the work may be done outside of class. Each student should create a 12-tone row which does not have any two consecutive intervals of 3 or 4. For example, avoid

0 - 3 - 7 or 0 - 4 - 7.

The row should incorporate both scale steps and jumps (intervals larger than 2). No two jumps should be of the same interval.

Each student should now write the Retrograde (R) and inversion (I) of his row and verify the results by checking to see if any note is repeated or left out. If an error has been made some note will be either omitted or repeated.

Through a dual process of improvisation and notation each student should use the row O, R and I in creating a solo composition which he will personally perform on an instrument of his choice. There are no restrictions on the length of the composition or on musical factors involved as long as the row and its derivatives are maintained. All varieties of articulation and timbral effects may be employed.

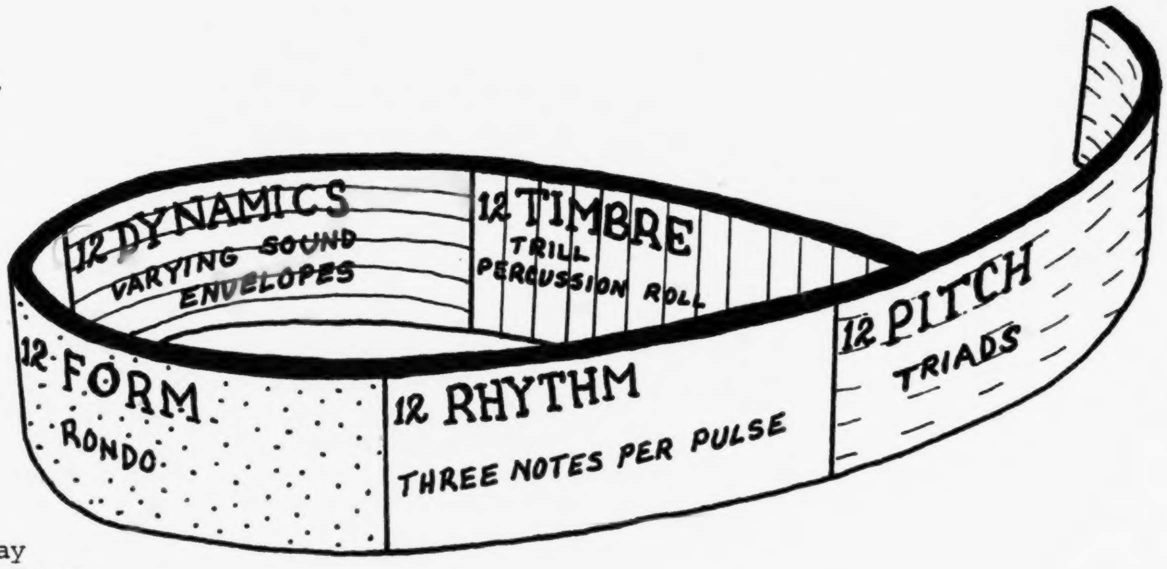
All compositions should be thoroughly and accurately notated, including tempo, dynamic and articulation indications.

It is recommended that performances of these solo compositions be spread out over several periods. A part of a number of classes may be set aside as a recital time, each recital featuring 4 to 6 performances. By spacing performances, students with weaker dexterous skills will have a better opportunity to rehearse their works.

Rather than an open discussion, one or two students should be assigned the responsibility of reviewing each composition. Reviews should follow the style and format of professional reviews in magazines and newspapers. (A copy of the New York Times may be made available for reference.) English teachers may assist in this assignment. It is suggested that reviews be compiled and mimeographed after each recital. Copies may be distributed to the class and posted on appropriate bulletin boards throughout the school.

Suggested Listening Examples:
- Empty Fox Hole - Coleman, Ornette; Blue Note 84246
- Suites 2, 5 - Bach, Johann S.: Mercury 90370

Cycle 12.



TIMBRE

The rapid alternation between two pitches which are one or two half-steps apart is called a trill. The speed of the alternation may vary, growing faster or slower as the trill continues, or it may remain constant throughout the length of the trill. Somewhat similar to the trill but involving no change of pitch is the percussion roll. This is a rapid reiteration of sounds from percussion instruments usually obtained by alternate strokes of sticks or beaters in both hands. With those percussion instruments whose sound decay rate is fast (snare drum, xylophone), the roll is a means for prolonging sound.

DYNAMICS

As previously indicated, sounds may be shaped dynamically. Some sounds, even those of short duration, may begin softly and end loudly, others may include both a crescendo and a diminuendo, and others only a decrescendo. Both composers and performers have responsibility in determining the specific sound envelope.

PITCH

A triad is a specific kind of simultaneous pitch grouping. It is made up of three different pitches which are either three or four half-steps apart. In some triads the second pitch is four half-steps above the first and the third is three half-steps above the second. In others the second is three half-steps above the first and the third is four half-steps above the second. Triads may also be made up of only three half-step intervals or of only four half-step intervals. Because of these possible differences in intervalic makeup, all triads do not sound the same. Triads may be used as the basis for either harmony or melody. Often a composer will use three or more triads as the basis for a composition. They may be selected and sequenced arbitrarily. Their relationship arises from their repetition.

FORM

A rondo is an extension of a three-part form by the addition of more sections of new material. In three-part form (ABA), the original section (A) is followed by one new section (B) before the return to the first section (A). Rondo form begins in the same manner (ABA) but adds at least one more new section (ABACA). Each additional new section, however many there may be, is followed by a return to the original section (ABACADA).

RHYTHM

Pulses may also be subdivided into three equal parts. When a quarter-note represents one pulse, its subdivision by three is called a triplet. In this case, three eighth notes, equally spaced, have the same total elapsed duration as the quarter-note. They also equal the combined length of the two eighth notes which would normally subdivide the quarter-note.

SKILLS FOR CYCLE 12.

AURAL

Identify three-part form and rondo form in student compositions and reference recordings.

Identify triplets as distinguished from sixteenth-notes.

Recognize a triad regardless of its particular configuration as contrasted to the harmonic sounds previously heard with tone-rows. This does not imply an ability to distinguish the four basic forms of the triad.

DEXTEROUS

In performing

Sing at least seven intervals, randomly arranged, using interval numbers.

Gain mastery of techniques of the roll on percussion instruments.

Acquire the ability to control envelopes of sound as required by the music.

Rhythmically perform triplets with accuracy when three are grouped together in one pulse: vocally, on percussion instruments and on other instruments of which they have some mastery.

While the technique is somewhat difficult, students should develop some ability to perform a trill on the instruments which they are using.

In conducting

Simultaneously control tempo, beat patterns, as previously given, and dynamics, and clearly indicate attacks and releases.

TRANSLATIVE

Make use of appropriate symbols for all articulation and special effects as noted in cycle structure.

Notate and read triplet figure when three are grouped in one pulse.

VOCABULARY

Triad
Triplet
Rondo form
Roll

Trill
Spatial
Antiphonal
Con brio

Sample Strategy

Cycle 12.

Groups of three students, each with pitched instruments, should work together on this strategy. Each member of the group should practice playing the pitches of triads built on B , C and E concert pitch. Use the intervals

0 - 4 - 7

for each triad.

When all members are secure in playing various configurations of each triad, the group should experiment by improvising together on the notes of one triad at a time. The group may move from one triad to another in any sequential order as long as they all change to the notes of the next triad at the same instant.

Each group may briefly demonstrate its improvisation for the entire class. In doing so, the aural ideas shared will be of later value.

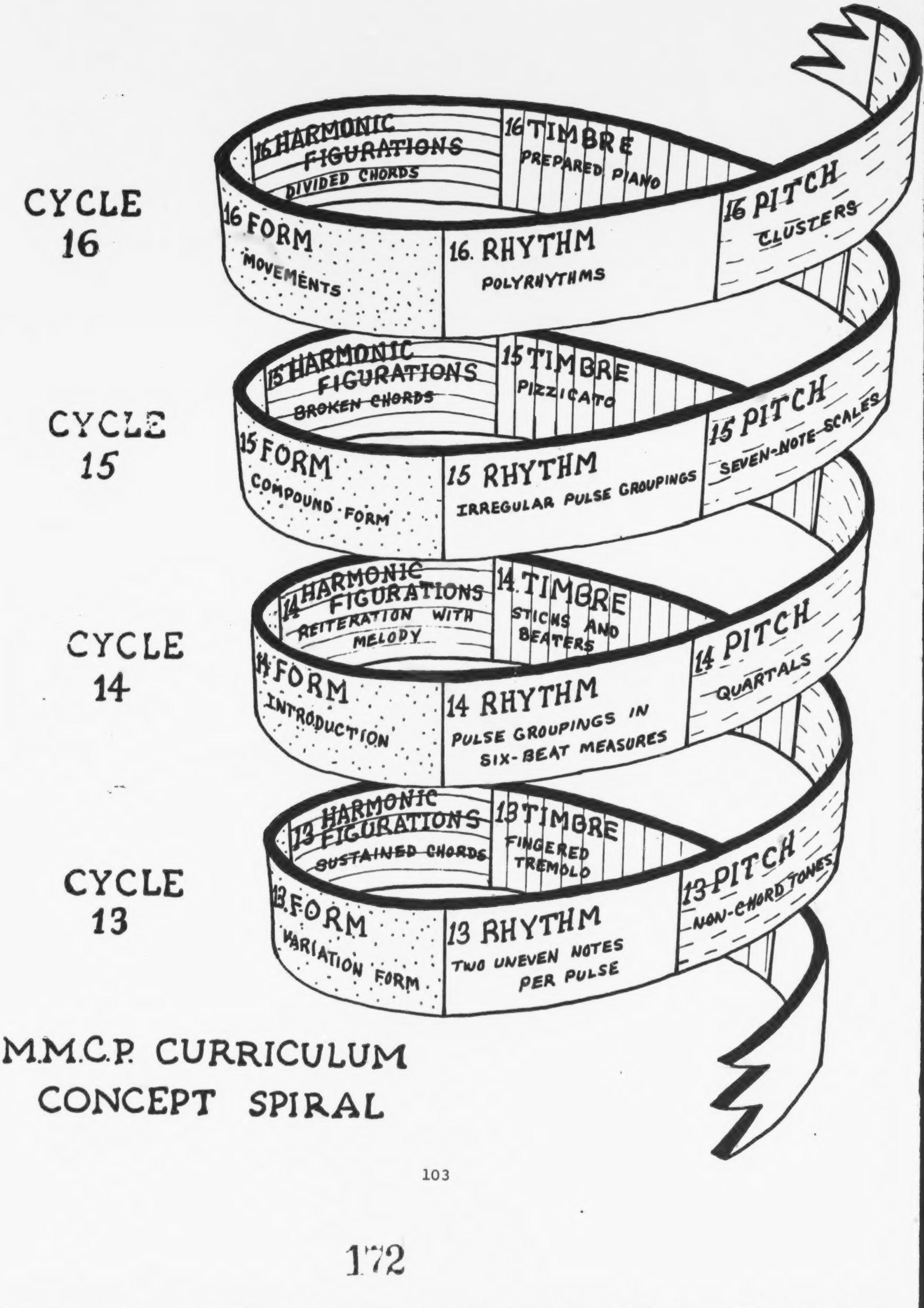
After demonstrations are completed, each group should begin the composition of a work in free rondo form. To increase the interest of the composition, each section (A, B, C, D) should be of a different length as well as a different character, and varied meters should be employed. The work, while written for three instruments, need not have three instruments continuously playing. Some sections may use 2 or even 1 instrument.

The entire composition should be scored and parts copied. One process for accomplishing this would be to have each performer notate his part, fragment by fragment, as agreeable ideas emerge from improvisation exploration. Students may assist each other in this. Each musician could copy his own part on a score when all the music is completed. After one part is copied the other parts could easily be vertically aligned.

It may be advisable to tape all completed compositions when they are ready rather than present them "live". The tape performances could then be played back for the entire class, without the pressures and problems of a live recital. Members of each group could hear their own work as well as the compositions of other groups.

Discussions after each piece are probably advisable since the pieces will be fairly long and complicated. The composer-performers should take the responsibility of leading a classroom critique of their own work.

Suggested Listening Examples:
- Trio for Flute, Viola, Cello, Op. 40 - Roussel, Albert; Decca 9777
- L'Histoire du Soldat - Stravinsky, Igor; Columbia MS6272
- Variations on a Folk Song - Sweelinck, Jan; Everest 3092



M.M.C.P. CURRICULUM
CONCEPT SPIRAL

Cycle 13.

HARMONIC FIGURATIONS

When triads or other pitch groupings are used for harmonic support of a melody, they may be sustained through many notes of that melody. When chords are sustained, dynamics, articulation, and vibrato play important roles in shaping the tension and movement of the piece.

FORM

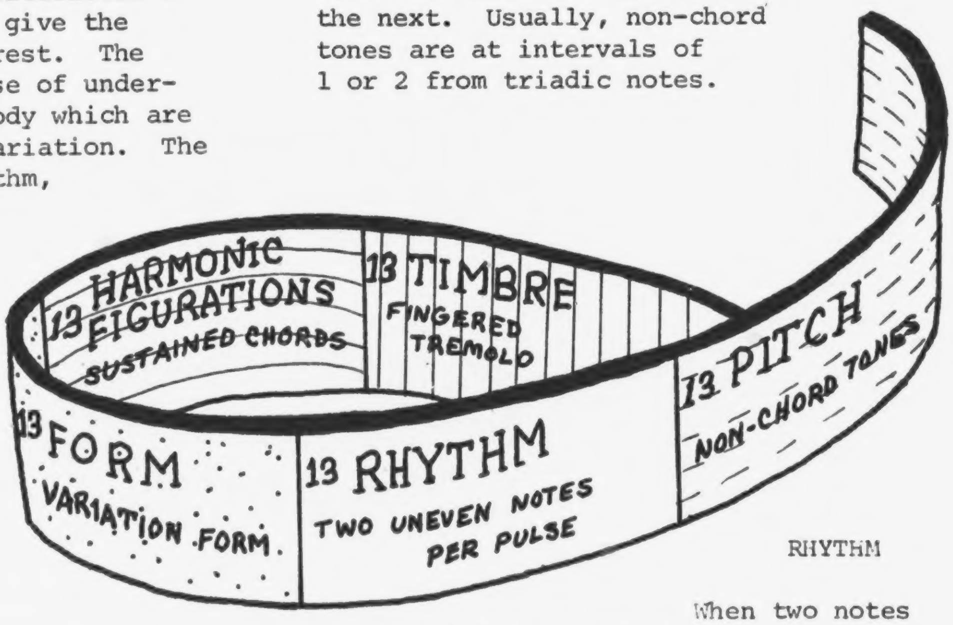
In the variation form, a melody is presented and then loosely repeated several times. Each reiteration is altered in some way to give the piece variety and interest. The unity comes from the use of underlying ideas of the melody which are recognizable in each variation. The composer may alter rhythm, vary pitches, change instruments, harmony, dynamics, tempos, note values, articulations, etc.

TIMBRE

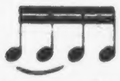
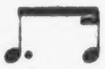
When the pitches used in rapid alternations are more than two half-steps apart, the resulting quivering or fluttering sound is called fingered tremolo. If the alternations fall into the rhythm of eighth or sixteenth notes, the tremolo is said to be measured. If the alternations are to be performed as rapidly as possible, the tremolo is said to be unmeasured. Tremolo may also be made between two groups of notes.

PITCH

When the pitches of triads are used as a basis for melody, other non-triadic pitches may also be used. These non-chord tones may be used to smooth out a musical line, to bring additional color, interest and variety, or to create feelings of tension or movement. Sometimes, non-chord notes fit between the notes derived from triads. At other times, they anticipate triadic notes or are sustained from one triad into the next. Usually, non-chord tones are at intervals of 1 or 2 from triadic notes.



RHYTHM

When two notes occur within one pulse, both notes need not be of the same length. One of the notes may be two or three times longer than the other. In a one-pulse triplet, the division may be a quarter note (two tied eighths) followed by an eighth. A more agitated effect may be had by tying the first three notes of a four-sixteenth-note grouping. This may be written either  or  . A dot placed after a note lengthens the note by half of its original duration.

SKILLS FOR CYCLE 13

AURAL

Identify both dotted eighth-sixteenth figures and quarter-eighth (triplet) figures and distinguish between them.

Identify composers' means of altering sections of the variation form, both in student compositions and in reference works.

Be aware of the use of non-chord tones in compositions. Recognize instances where non-chord tones are used to achieve interesting musical effects.

At this stage, the student should be able to listen to longer reference recordings, compositions of five to ten minutes in duration, for more than the identification of technical musical items. He should be sensitive to the general character of the piece and to the over-all expressiveness of the music.

DEXTEROUS

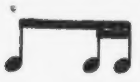
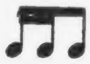
In performing

Develop technical facility in producing fingered tremolo on the piano and on other instruments. Be able to maintain a constant rate of speed or a gradual increase or decrease of speed as demanded by compositions used in the classroom.

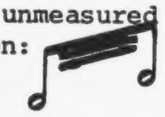
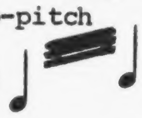
Produce the rhythm of the dotted eighth-sixteenth and the quarter-eighth (triplet) accurately, both vocally and instrumentally.

Improvise vocally on the pitches of one triad using the notes of the triad and occasional non-chord tones. This may be done with words or with a neutral syllable.

Perform rhythmic figures which use both sixteenth and eighth notes.

 or 

TRANSLATIVE

Notate fingered tremolo correctly. The duration of each pitch should be that of the total duration of the tremolo. For example, an unmeasured two-pitch tremolo lasting for the length of a half-note is written:  not 

VOCABULARY

Harmonic figuration
Fingered tremolo
Measured tremolo
Unmeasured tremolo

Non-chord tones
Sustained chords
Variation form
Dot

Sample Strategy

Cycle 13.

This composition should involve four basic components: groups of three to five instrumentalists who will perform sustained chords, percussionists who perform improvisationally, readers, and conductors. (Dancers and/or special light show apparatus could also be effectively employed.) This piece is to be largely improvisational, with all of the students participating in various phases of it.

Some students should select dramatic readings which will be appropriate with sustained chords. Other groups of students will create sequences of harmonic groupings that they will play on their instruments. Probably four or five chords will suffice. These may be either triads or other pitch combinations. With its own conductor, each group should explore various dynamics, articulation, and instrumentation possibilities in order to have a number of alternatives available.

With the readings chosen, each reader should select the instrumental group which best fits in with the character of the reading. A percussion player should also be designated for each piece and, if used, dancers and lighting apparatus.

The compositions should be staged with the component factors of the compositions spatially separated. The conductor will only coordinate the instrumental group. He does not control the entire composition. All three components (the instrumentalist, the reader, and the percussionist) should operate independently but in sensitive relationship to one another.

Suggestions:

Probably no component of the composition should operate continuously. Sustained sounds may enter and exit either simultaneously or one after another. Words or musical sounds may be repeated at the discretion of the performers. Two or more readers may be employed for the same or different texts. The same is true of the instrumental groups.

Cycle 14.

HARMONIC FIGURATIONS

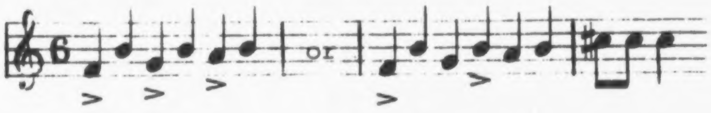
At times, the notes of the harmony may have the same duration as the melody. When this is the case, the melody sometimes tends to be obscured unless it is higher or lower than the harmony, in contrasting timbre to the harmony, or at a higher dynamic level than the harmony.

FORM

While many compositions begin with a statement of the basic ideas, some employ a short introductory section which serves to establish the character before the major ideas are presented. The introduction may make use of fragments of musical ideas to be presented later, or simply create a condition for the hearing of the basic ideas. Whatever its basis, it must be highly correlated with the rest of the composition.

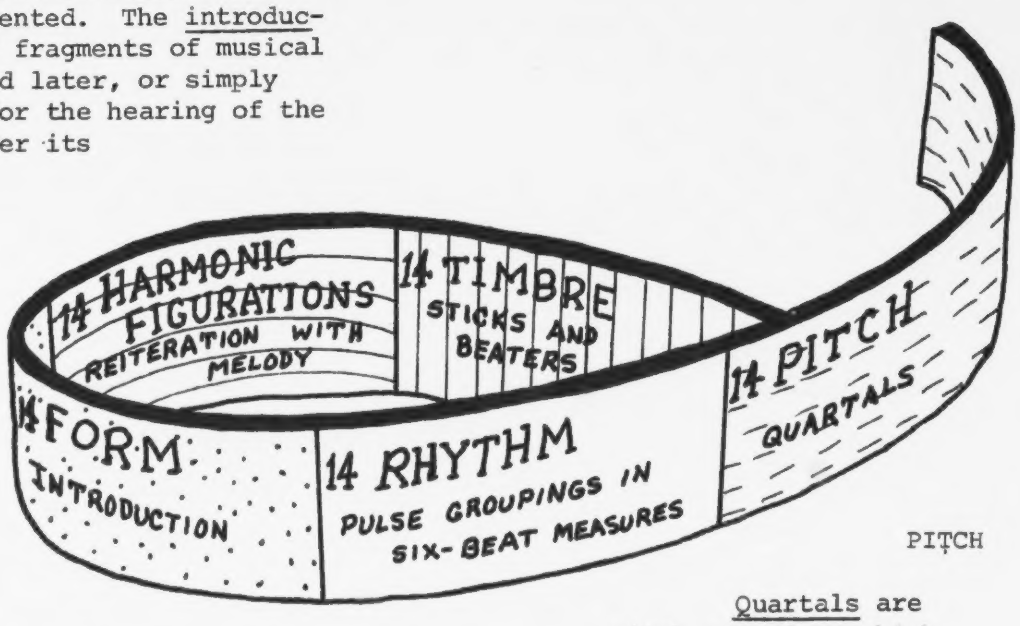
RHYTHM

While the note of the first pulse of a measure tends to be the strongest sound, other sounds within the measure may also receive emphasis. By utilizing such secondary emphases in composition and performance, the composer may maintain or vary the rhythmic feeling. Six-pulse measures, for example, may have either of the following accent patterns:



TIMBRE

The timbre of percussion instruments can be altered by the use of different beaters. Beaters are made of wood, steel, plastic, rubber, leather, and a wide variety of fabrics and hides. Their density ranges from firmly compressed to relatively soft. The choice of the material, weight, density, and texture of the beater is as important to the expressiveness of the sound as the instrument which is played.



PITCH

Quartals are pitch groupings which are used in much the same manner as triads. They differ from triads in both their sound and their construction. Usually, they are made up of three or more pitches which are spaced at intervals of 5 (i.e. D,G, C, F). Quartals may be used as the basis for an entire composition, or they may be intermingled with triads or other pitch groupings. In harmony, the notes of a quartal may be arranged in any order (i.e. F, G, C, D; G, C, F, D; C, F, D, G; C, D, F, G; etc.)

SKILLS FOR CYCLE 14.

AURAL

Identify triads as distinguished from other pitch groupings. (Recognition of inversions is not important at this stage.)

Identify quartals as distinguished from other pitch groupings. (Recognition of inversions is not important at this stage.)

Identify pulse groupings in six-beat measures.

Distinguish introductions from main ideas in music used in the classroom.

DEXTEROUS

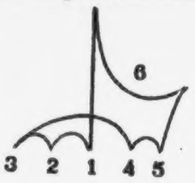
In performing

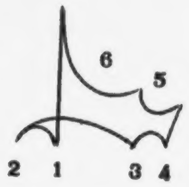
Students should be able to play triads and quartals on the piano. (The type of triad need not be a concern unless this arises from class discussion.)

Students should perform accents as indicated in their music.

In conducting

Students should be able to maintain six-beat patterns in both indicated configurations.





Student conductors should also be able to indicate tempo and mood changes while maintaining beat patterns.

TRANSLATIVE

In preparing scores and parts the students should clearly indicate flats and sharps as needed to create quartals, triads and other pitch groupings.

Scores and individual parts should be carefully and clearly prepared and should contain all of the information necessary for good performance. This should include time signatures, accurate notation, tempo, articulation and volume indications, appropriate clefs for performing instruments, and special indications of phrasing.

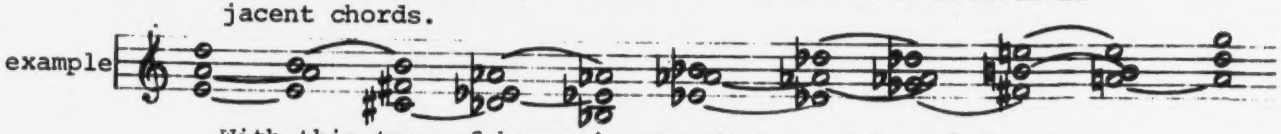
VOCABULARY

Quartals
Introduction
Andante
Reiteration
Beaters
Vivo

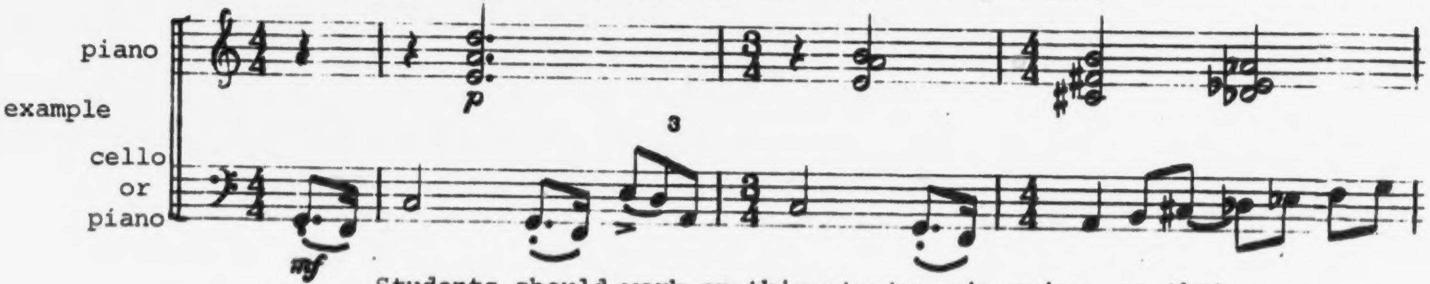
Sample Strategy

Cycle 14.

In a sequence of quartals, a harmonic relationship may be maintained simply by the use of a common tone between adjacent chords.



With this type of harmonic structure, a solo melody may be added which uses the pitches from the harmony and other pitches selected simply because they sound pleasing.



Students should work on this strategy in pairs, so that one student may play the chords on the piano and the other the melody either on the piano or on another instrument. First, they should construct a sequence of quartals maintaining a common tone between adjacent chords. When this is completed, the sequence should be practiced on the piano so that the sounds become familiar.

The melody should be constructed through an improvisation process, trying various melodic ideas in relationship to the harmony. As ideas emerge they should be notated, allowing the composition to be shaped by the musical nature of the materials.

When creative work has progressed to the stage where four or five measures are completed, the students should try their ideas on each other and discuss the variety of musical thoughts that are being employed. Notational problems should also be discussed, with both the teacher and other students assisting where necessary.

After these trial runs, work on the compositions should resume. Many students may wish to complete their compositions outside of classtime because of the need for pianos. When the compositions are completed they may be taped for performance or performed live. Discussions should be free and should deal with whatever problems the students have experienced.

Cycle 15.

HARMONIC FIGURATIONS

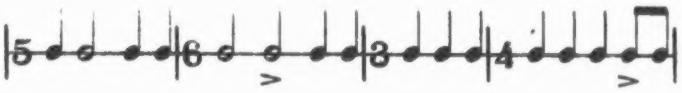
Chords are commonly thought of as being the simultaneous sounding of several different pitches. The same pitches, when introduced in succession, also give a harmonic effect. Called broken chords, the pitches may be introduced in either evenly or unevenly spaced intervals of time. They may be arpeggiated (played in succession) up or down, or may be played in any other sequence.

FORM

Many longer musical compositions are structured from the union of several smaller forms. In variation form, for example, the original theme may be in binary (two-part) form while subsequent sections may include a canon built on the original thematic material, and an expansion of the ideas of the binary section into a three-part form. Such larger musical designs built out of smaller complete units are said to be in compound form.

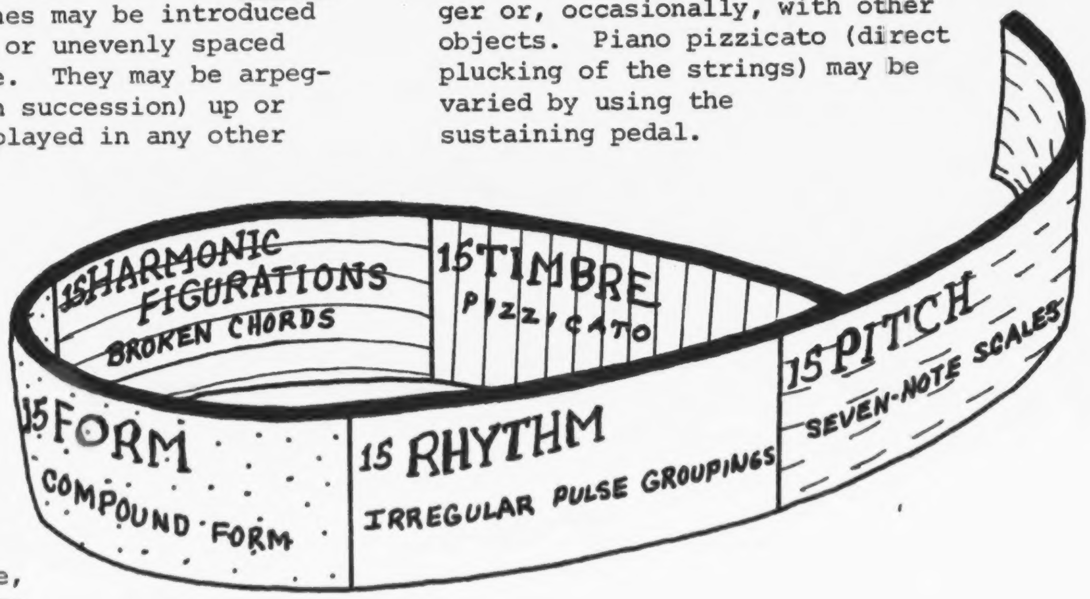
RHYTHM

It is not necessary that pulses be grouped in any consistent fashion. Often the nature of the music suggests that pulses be grouped in a random fashion. When such a situation exists both the meter and the notes receiving a secondary stress may be varied as the composer wishes. For example:



TIMBRE

Pizzicato, plucked strings, provides timbral variety in music for the piano and in music for stringed instruments which are normally bowed. Plucking is usually done with the finger or, occasionally, with other objects. Piano pizzicato (direct plucking of the strings) may be varied by using the sustaining pedal.



PITCH

A selection of pitches sequenced in an ascending or descending manner is called a scale. Previously, five- and six-note scales have been used flexibly in the creation of melody, harmony, and polyphony. Seven-note scales offer more extensive sound possibilities. If the seven-note scale is made up of tempered intervals, the spacing between notes is one, two, or sometimes three half-steps. The overall character of the scale is determined by the positioning of these different steps. The notes of these scales are not used in the sequenced manner of the row. Any note may be sounded whenever the composer wishes. It is characteristic that one of the notes tends to predominate and to serve as a sound of resolution.

SKILLS FOR CYCLE 15

AURAL

Identify commonly used scales and pieces constructed on them.

Identify compositions that employ scales which are uncommon.

Identify simple forms in compositions in compound form.

Identify meter groupings in compositions where the meter is varied. (This does not imply slavish drills in odd meter identification.)

Students should develop the ability to repeat, without notation, both common and uncommon scales performed by others.

DEXTEROUS

In performing

Play and sing arpeggiated chords.

Play and sing scales with varying placement of whole and half steps.

Perform compositions using varied meters with sensitivity to the natural stress.

Experiment with various phrasing possibilities, both vocally and instrumentally.

In conducting

Indicate both meter change and accent in irregular pulse groupings.

Control the balance, blend and character of a composition through facial expression, hand movement and posture.

TRANSLATIVE

Notate and read irregular pulse groupings.

Notate both commonly used and uniquely constructed seven-tone scales.

With simple material, students should be able to transpose from concert pitch, at sight, as required by the characteristics of their instrument.

VOCABULARY

Arpeggio
Binary
Resolution
Concert pitch
Allegretto
Prestissimo
Broken chords
Compound form
Pizzicato
Scale
Grave
Vivace

Sample Strategy

Cycle 15.

Select a scale involving any seven successive white keys on the piano. Pick any one of them to function as the sound of resolution.

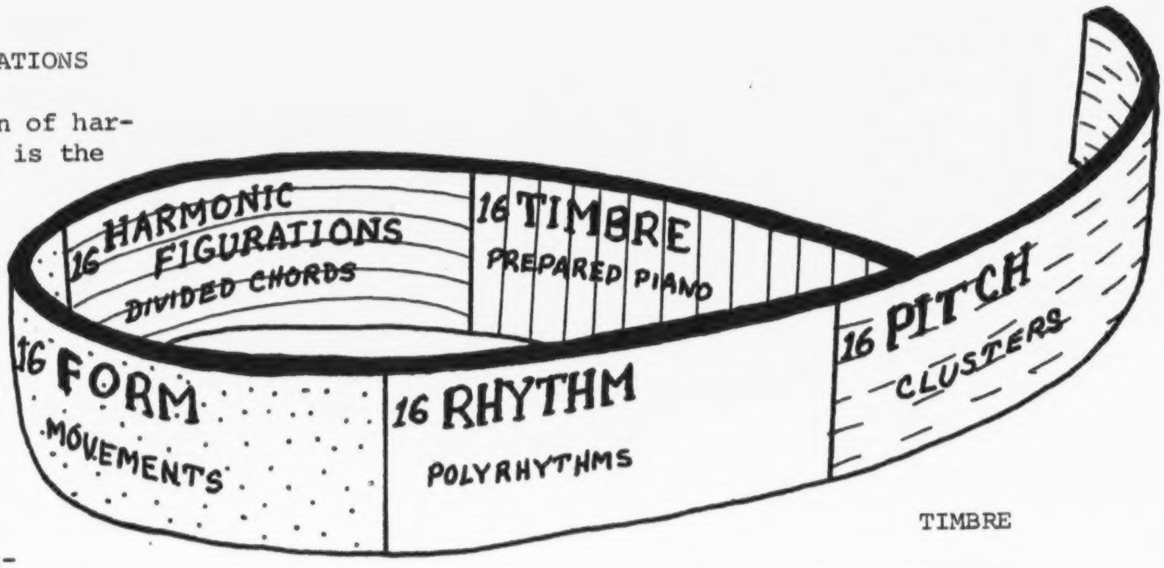
Experiment, melodically, to discover ways to allow musical phrases to come to a logical ending on the pitch selected to be the sound of resolution. Choose still another pitch to function as an alternate sound of resolution. Again, experiment to discover ways in which this note will become the final note of a phrase.

Write a melody which is five or six phrases in length. Some phrases should end on one of the sounds of resolution, others on the alternate. With the melody complete, consider which instrument or voice relates best to the character of the piece. Score the melody for the instrument or voice selected.

After several of the melodies have been heard, consider the musical implications of the notes of resolution which were not commonplace as contrasted with those that were.

Questions can be focused on interesting meter or phrasing concepts, the use of other instruments (percussion, for example) with the melody, or other melodies in combination.

Cycle 16.



HARMONIC FIGURATIONS

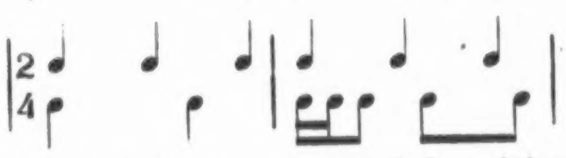
Another pattern of harmonic grouping is the the divided chord. Here the pitches of the chord are divided into lower and higher tones. Usually, lower tones sound on the strong beat of a measure and are followed by the remaining (higher) tones. These higher pitches may sound once, or more than once. The resulting pattern of movement may be varied through changes in pulse groupings, changes in secondary accents, changes in pitch areas, etc.

FORM

Extensive musical works are frequently divided into major divisions which are called movements. Each movement is complete in itself. It is related in some musical manner to other movements of the composition but, at the same time, differs from them in general musical character. Movements may be either long or short and in either compound or simple form. A first movement, for example, may be in rondo form, a second in three-part form, and a third in variation form.

RHYTHM

Two or more contrasting rhythmic ideas may be heard at the same time. The most common is the three against two, but practically any combination is possible. An example would be:



Such polyrhythms may be used for either a short phrase or for an extended section.

TIMBRE

The sounds of the piano may be altered by various means to produce fresh timbres. The methods of alteration range from placing some foreign material on the strings to adding material to the hammers. Simple techniques for preparing the piano such as lacing paper between strings or placing light resonators on strings have little adverse effect on a good piano and allow the composer a wide variety of timbral choices.

PITCH

A cluster is created by sounding a number of adjacent pitches. It may consist of three or more pitches separated from each other by half-steps, whole steps or a combination of both. Clusters may be used singly or may follow one after another. By changing the size, the outer voices, and the position of half-steps within the clusters, a feeling of movement and textural interest can be achieved. The notes of the cluster may be introduced in random succession as well as simultaneously. Releases may be simultaneous or staggered. Clusters are particularly effective with varying dynamics and articulation.

SKILLS FOR CYCLE 16

AURAL

Recognize those factors which comprise musical form in student compositions and reference recordings.

For a listing of the factors of form, see the Concept Index.

Identify the sound of clusters as distinguished from other pitch groupings.

Identify unusual timbres that result from unorthodox use of instruments (prepared piano, for example).

The student's attention span should allow for extended listening to complete movements as well as to compositions having several movements. Reference recordings need not be restricted merely to examples of isolated factors. For instance, the logic of the use of the cluster and the musical implications of its sound in a large musical context are certainly as important as the mechanics of cluster formation.

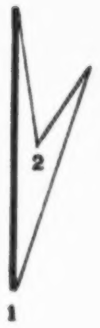
DEXTEROUS

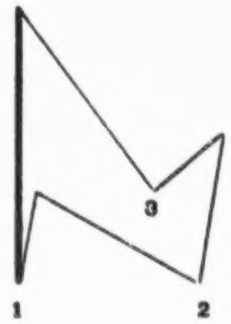
In performing

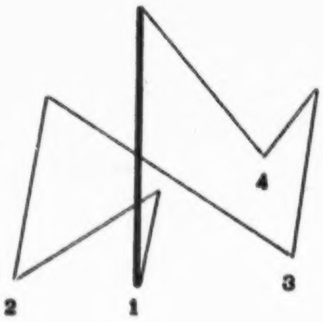
Students should be able to maintain a duple meter while other instruments or voices perform a triple meter.

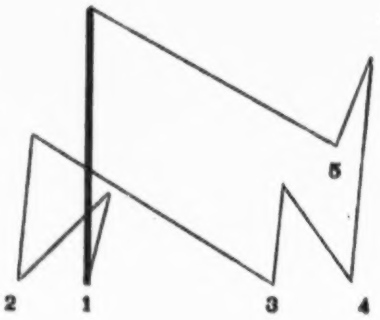
In conducting

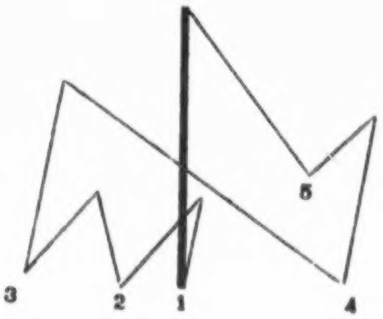
Indicate, within the framework of standard beat patterns, the sub-division of each beat.

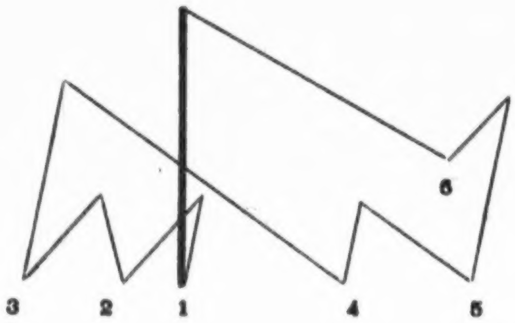












TRANSLATIVE

Notate polyrhythms so that the alignment on the page indicates precisely the simultaneous sounds and the exact points of occurrence of all other sounds.

VOCABULARY

Divided chords
Movements
Polyrhythm
Cluster
Prepared piano
Resonator

Sample Strategy

Cycle 16.

This strategy involves all of the students in the class. It is necessary that each student perform on a pitched instrument. Highly developed instrumental skills are not required since each student plays only one note.

Students should be divided into groups of four or five, each group positioned in a different area of the room. With one student serving as the director, the entire class should experiment to ascertain the effects of timbres, articulation, dynamics and pitch areas on clusters.

With other students taking turns as conductors and with selected solo performers, compositions employing instrumental clusters should be improvised. Solos may be either instrumental or vocal.

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DISCOGRAPHY

Contrasting Sounds

African Dance Song
African Music, recorded by Laura Boulton
Folkways FW 8852

From that area formerly called Bambara-French Sudan. Instrumentation is flutes, bells, and drums.

Music of Tibet
History of Music in Sound
Vol. 1. Ancient and Oriental Music
Oxford University Press: RCA Victor

(a) Lamaist Instrumental Ensemble

Conical oboe, long copper horns or trumpets, human skull drums, frame drums, and copper kettledrums, all in pairs. Percussion provides an incessant rhythmical pattern; horns alternate on one-tone drone or play together; oboes play melody in unison.

(b) Lamaist Chanting

Chanting in very low register moving in small steps within narrow compass. Percussion of drum and two bells keeps up basic rhythm. Horn drone.

(c) Hymn by Two Nuns

Pentatonic hymn (to Discipline) sung in unison, accompanied by a clapper and suspended metal disk struck with wooden hammer.

Early English Estampie
Studio der Fruehen Musik, Muenchen
Telefunken AWT 9432-C

Thirteenth Century English dance using laute, fidel, blockfloete, and rhythm instruments.

Bela Bartok: Contrasts for violin, clarinet
and piano (1938)
Robert Mann, violin; Stanley Drucker, clarinet;
Leonid Hambro, piano.
Bartok Records 916

Though technically a trio the clarinet player uses both Bb and A, while the violin player uses two violins, one tuned conventionally and one tuned to G#, D, A, and Eb. First movement is Verbunkos, 'Recruiting Dance', a stylized adaptation of a popular Hungarian dance of the eighteenth century. Second movement, Piheno, 'Relaxation' is introspective, philosophical, contrasts mood, texture, and tempo. Final movement is Sebes, 'Fast Dance', with mistuned violin in folk setting; syncopated, uneven, with a section in 13/8.

Edgard Varèse: Ionization (1926)
Sounds of New Music
Folkways FX 6160

Varèse recognizes timbre, pitch, intensity and duration as separate entities, to be blended without being dependent upon each other.

Andres Lewin-Richter: Study No.1
Electronic Music
Turnabout 4004

"My main objectives in this study were ... instrument-like sounds ... bell-like sonorities ... contrabass pizzicati ... a vast range of percussive and plucking sounds ... to create tensions and relaxations through complex rhythms, increased densities of tone color ... intensity diluted by introduction of 'richer' and 'more familiar' sounds."

Igor Stravinsky: L'Histoire du Soldat (1918)
Members of L'Orchestre de la Suisse Romande;
Ernest Ansermet, Cond.
London XLL 1651/2

Violin, double bass, clarinet, bassoon, trumpet, trombone, percussion. Concert suite: 1. The Soldier's March; 2. Music to Scene 1; 3. Music to Scene 2; 4. The Royal March; 5. The Little Concert; 6. Three Dances (Tango, Waltz, Ragtime); 7. The Devil's Dance; 8. Great Chorale; 9. Triumphal March of the Devil. Essentially Faustian drama with soldier as rustic innocent, who wins beautiful princess but loses out finally to the wily devil.

Dick Raaijmakers: Contrasts (1959)
Philips Electronic Studio
Epic IC 3759

Original title, 'Tweeklank', means 'two-note chord' and is based on the mutual opposition of contrasting musical quantities such as sound, rhythm, and dramatic forms ... a second movement constructed as a 'typical' electronic play of rhythm and sound, without either harmonic or melodic properties ... in the first movement a melody in canon for two voices is contrasted with an impassioned drum figure.

Complementary Sounds

Munahuanqui
Music of Peru
Ethnic Folkways Library No. P 415

Social dance typical of the Quechua Indian. Title means "love me", though this type of dance is also used to honor the saints and the ancient nature spirits. The flutes and harps are tuned to old Peruvian scales.

Gambangan
Gamelan Orchestra
Columbia ML 4618

Ancient melody formerly played during funeral rites. This orchestra is from Pliatan, Bali, the small island of the Indonesian Republic east of Java. Twenty-five musicians using various gongs, metallophones, drums, and cymbals. The scale used is basically pentatonic with semitones.

Court Dance
Music of the Gothic Period and the Early Renaissance
Allegro al 14

This is a trio of vielles. They were the predecessors of the viols, which in turn were the antecedents of today's violin family. They appeared about 900 and lasted through the sixteenth century.

Johann Pezel: Sonata No.4 (c. 1685)
Shuman Brass Choir; Davis Shuman, cond.
Period SPLP 526

Sonata for five voiced brass choir; two trumpets, three trombones; sometimes called 'tower music'. Pezel and Gabrieli did much to develop Italian Baroque brass technique.

Jacques Ibert: Trois Pièces Brèves (c. 1930)
New York Woodwind Quintet
Everest LPBR 6092

Flute, oboe, clarinet, bassoon, horn. Dance rhythms in the end movements with a lyrical duet for flute and clarinet in between.

John Cage: Dance (1944)
Folkways FX 6160

Played on a 'prepared' piano, transforming the timbre and pitch by attaching rubber, wooden, and metal objects at different angles and distances from the damping points. Timbres are used to emphasize the rhythmic patterns. Traditional thematic and harmonic development have been dispensed with.

Otto Luening: Fantasy in Space (c. 1950)
Folkways FX 6160

A 'performance piece' exploiting the agility of the flute. Acoustical resources of the tape recorder were used to produce a piece which would communicate with an audience "conditioned to impressionistic, virtuoso and tonal music".

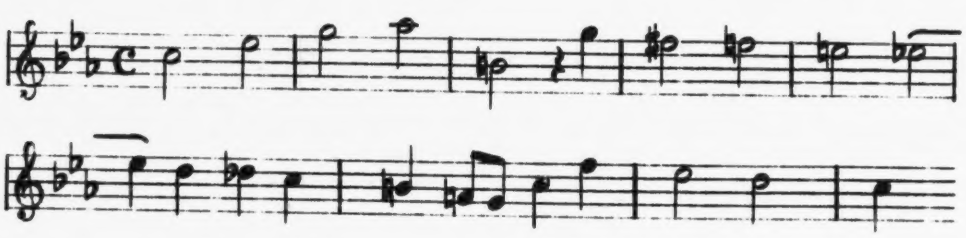
Bela Bartok: Quartet No.6 (1939)
Juilliard String Quartet
Columbia ML 4280

" ... magnificent exploitation of the tone production resources of the medium ... startling originality of the sound itself ... subtle shifts of sonorous balance ... unique timbral characteristics serve to endow an ambiguous harmonic aggregate with an individuality of 'tonic sonority'."
- Milton Babbitt.

Timbre

J.S. Bach: Ricercar #2 (1747)
From The Musical Offering

Imitative counterpoint of solemn, restrained character based on a theme given Bach to improvise upon by Frederick II.



Anton Webern: Ricercar #2 (1935)
From Bach's Musical Offering
Instrumental group under the direction of Robert Craft
Columbia K4L-232

Adaptation of the six-part ricercar to Webern's "Klangfarben" style, literally, 'tone-color'. Scored for flute, oboe, English horn, clarinet, bass clarinet, bassoon, French horn, trumpet, trombone, tympani, harp, strings.

Georges Antheil: Ballet Mécanique (1924)
New York Percussion Group; Carlos Surinach, cond.
Columbia ML 4956

" ... somewhat like modern architecture with new methods of musical engineering and new materials ... devoted entirely to the TIME-SPACE principle, the theory that TIME rather than TONALITY is the main, basic canvas of music ... sounds are used 'because they are part of the musical sound of our modern life' ..." -Antheil

John Cage: Construction in Metal (1937)
Manhattan Percussion Ensemble
25-year Retrospective Concert at Town Hall
KO8P-1498

Six players use the following: orchestra bells, 5 graduated thundersheets, strings of the piano (one player at the keyboard, another applies a rod to the strings), sleigh bells, graduated oxen bells, 3 graduated Japanese temple gongs, 4 graduated muted brake drums, 8 graduated cow bells, 4 graduated Turkish cymbals, 4 graduated muted anvils, 4 graduated Chinese cymbals, 4 graduated muted gongs, gong, tam-tam, water gong (12" to 16" Chinese gong which is raised out of, or lowered into water during tone production).

Frère Jacques
Played by IBM 7090 Computer and Digital
to Sound Transducer
Decca DL 9103

Electronic, computerized treatment of the familiar round. Done with five voices which have the following attacks and timbres.

1. Modified square waves; modified rectangular attack.
2. Random noise, narrow band; percussive attack.
3. Modified square wave; percussive attack.
4. Timbre and attack taken from the trombone.
5. Same as voice 1.

Bicycle Built for Two
IBM 7090 and Transducer
Decca DL 9103

Computer programmed to sing as well as simulate Honky-Tonk piano accompaniment.

M.V. Mathews: Numerology
IBM Computer and Digital to Sound Transducer
Decca DL 9130

Demonstration of various effects possible with computer.

1. Long crescendo in which loudness is increased by raising vibrato frequency, vibrato amplitude, and pitch, as well as intensity.
2. Duet in which treble voice is gradually modulated in timbre from percussive, piano-like sound to a slow-attack, string-like sound.
3. Melody from bass voice in previous section is moved to treble. Between each note of original melody, the voice splits and divides continuously into three notes, which recombine on next note.
4. Melody played three times; first in treble, then in bass with slight alterations in rhythm, finally in the treble with a frequency attack on each note.
5. Bass line played first with conventional notes and then with notes in which the frequency has been blurred with a large, rapid vibrato.
6. Sentimental, high-pitch section which demonstrates nuances of vibrato and attack.
7. Canon in which the two identical voices are separated by one rhythmic beat.
8. Finale in which tempo gradually increases to a point beyond comprehension. Some of the notes have no single frequency; they sweep over a range of as much as five octaves, and sound like birds or bullet ricochets.

Duration

Modest Moussorgsky: Pictures at an Exhibition
(Originally for piano solo, 1874; orchestrated by Ravel in 1923)
Philadelphia Orchestra; Ormandy, cond.
Columbia ML 4700

Limoges: The Market Place

This depicts a furious dispute among the market women at Limoges.

Catacombs (in Paris)

Joseph Haydn: String Quartet No.79 (1797)
in D Major, Op.76, No.5
Hungarian String Quartet
Turnabout TV 34012S

An excellent example of largo and its potential for emotional intensity.

Johannes Brahms: Piano Quintet (1861)
in G Minor, Op.25
Hungarian String Quartet with Georges Szolchany, piano
Turnabout TV 34037S

Robert Schumann: Traumerei from Kinderscenen
Pablo Casals, cello
RCA Victor LCT 1050

Nicolai Rimski-Korsakov: Flight of the Bumblebee
Pablo Casals, cello
RCA Victor LCT 1050

Henk Badings: Evolutions-Ballet Suite (1958)
Philips Lab in Holland
Epic LC 3759

Overture.
Air; a pas-de-deux, lyrical and elegiac.
Ragtime; fantasy on 3-2-3 beats, with ecstatic 'breaks' of electronic percussion, a lyrical melody, and a dramatic closing episode.
Intermezzo; ternary structure, beginning and ending with mild 'klangfarbenmelodie', interrupted by a scherzando section of stony percussion sounds.
Waltz; burlesque introduction and a waltz melody in strict three-part canon.
Finale; refers back to opening but develops into fanfare-like conclusion.

Dynamics

Gabriel Fauré: Requiem, Op. 48 (1887)
Introit and Kyrie
L'Orchestre de la Suisse Romande with l'Union de la Tour de Peilz; Ernest Ansermet, cond.
London 5221

Hector Berlioz: Te Deum, Op.22 (1849)
Judex Crederis
Royal Philharmonic Orchestra, London Philharmonic Choir, Dulwich College Boys Choir; Sir Thomas Beecham, cond.
Columbia ML 4897

Robert Starer: Night Music for Percussion
Saul Goodman Percussion Ensemble
Columbia CL 1533

"Night Music is scored for four tympani, small and large snare drums, xylophone, bells, chimes, celeste, triangle, gong, and bass drum. The tympani introduces the quiet melody here, ending with a soft glissando. Unlike most percussion pieces, Night Music has no smashing climaxes; instead it makes its delicate effect through the contrasting sounds of bells, chimes, and celeste." -Saul Goodman

Morton Gould: Parade
Saul Goodman Percussion Ensemble
Columbia CL 1533

For two snare drums, two bass drums, one pair of cymbals and a device for simulating the sound of marching feet. Two drum corps approach each other, meet, then proceed away from each other into the distance.

Claude Debussy: Prélude à l'Après-Midi d'un Faune (1894)
L'Orchestre de la Suisse Romande; Ansermet, cond.
London LS 503

Quiet, restrained, muted prelude to Stéphane Mallarmé's pastoral poem of the same name; impressionist music for symbolist poetry.

Arthur Honegger: Rugby (1929)
Philharmonic Symphony Society of London;
Herman Scherchen, cond.
Westminster XWN 18486

"I am especially drawn to the savage, brusque, disordered, struggling rhythm of rugby. It would be a mistake to consider my piece as program music. I try very simply to express, in my own musical language, the rhythm and color of a match at the Colombes Stadium; in all honesty I feel bound to indicate my sources. That is why this short composition bears the title Rugby." - Honegger.

Mario Davidovsky: Electronic Study No.1
Columbia-Princeton Electronic Music Center
Columbia ML 5966

Pitch

Wolfgang Amadeus Mozart: Marten Aller Arten (1782)
from Die Entfuehrung Aus Dem Serail
Joan Sutherland, soprano; Orchestra of the Royal Opera House, Covent Garden; Francesco Molinari-Pradelli, cond.
London A 4241

Classic aria illustrating both the dramatic and the coloratura aspects of the soprano range.

Wolfgang Amadeus Mozart: O Isis und Osiris (1791)
from Die Zauberfloete
Kurt Boehme, bass; Vienna State Opera Orchestra;
Karl Boehm, cond.
London A 4319

Bass prayer to the gods.

J.S. Bach: Suite for Unaccompanied Cello (1720)
No.3 in C Major
Janos Starker, cello
Period SPLP 543

Prélude; Allemande; Courante; Sarabande; Bourrée; Gigue.

Reinhold Glière: Concerto for French Horn and Orchestra in B Major, Op.91
V. Polskh, horn; Bolshoi Theatre Orchestra; Glière, cond.
Russian recording ROCT 5289-56

Illustrates wide range of solo instrument, especially in the cadenza toward the end. This is the first movement, Allegro.

Vladimir Ussachevsky: Transposition
Sounds of New Music
Folkways Records FX 6160

"Most tape recorders have two speeds, and so any sound you record is immediately available in two versions, the original and one an octave higher - or an octave lower. If you have two tape recorders, then any sound can be recorded up or down as many times as one wishes. All the sounds here from the high hiss to the low, bell-like tone originated from a single tone, the lowest 'A' on the piano, which is 27.5 cycles per second."
- Ussachevsky

Reverberation

Described by Ussachevsky as another simple device for modifying the quality of a recorded tone - by the electrical repetition of tones at fixed intervals. The same sequence of tones heard on the previous band is repeated here, subject to reverberation.

Composition

Written by Ussachevsky and presented at a Composers Forum in May, 1952, as an experiment based on the tones heard in Transposition.

Underwater Waltz

Utilization of the material in Reverberation.

One-, Two-, and Three-note Tunes

Murut Music of North Borneo
Primitive Music of the World
Henry Cowell, editor
Ethnic Folkways Library FE 4581

Timpun (chant) on one tone. Percussion tone is called lansąran, created by dancing on flexible floor of house built up on stilts which then activates instrument below. Pitch never varies, even when chanting and dancing last all night.

Music of New Guinea
see above example

Two players alternate, each playing a single tone on a homemade flute. A man's falsetto voice enters imitating the sound of a bird. Flutes and singer retain their original tones throughout, flutes a microtone apart.

This time four men alternate with their single tones, again on homemade flutes. At times they are joined by two lower flutes.

Music of Panama
see first example

Primitive chant consisting of two tones, a half step apart.

Two players on homemade alto flutes improvise a sort of polyphony using only two or three tones each, aided by a chant.

Single improvisation on simple flute using a few tones, a few overtones, and lots of breath.

Pygmies of the Ituri Forest
Primitive Music of the World
Henry Cowell, editor
Ethnic Folkways Library FE 4581

Two groups of singers divided antiphonally. One group sings G, A, B, and D; the other sings (below) on D, E, overlapping on G and A. The groups sing separately, frequently overlapping to make the counterpoint effect.

Music of Australia
see above example

Group of men sing together using a scale of a few notes, aided by clapsticks. Also heard is a didjeridu, a wood or bamboo pipe with a mouthpiece producing a tone and its overtone. Note the mutual silences at end of the verses.

Alban Berg: Wozzeck (1921; premiere 1925)
Act III; scene 2
Berlin Opera; Karl Boehm, cond.; Dietrich Fischer-Dieskau and Evelyn Lear, soloists
Deutsche Grammophone 138 991/92

Invention on the tone B-natural, symbolizing the death of Marie, who is killed by Wozzeck for her infidelity.

Modes

Pater noster - Ambrosian
History of Music in Sound
Vol. II. Early Medieval Music up to 1300
Oxford University Press: RCA Victor

Early form of plainchant, forbidden by Charlemagne in his efforts to bring about a unified (Gregorian) rite in western churches. Still survives in diocese of Milan. Name indicates introduction by St. Ambrose (c. 333-97) who taught congregation to sing in alternate choirs 'according to the Oriental usage'. Three-tone.

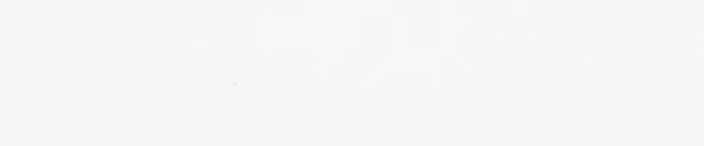
Pater noster - Mozarabic
History of Music in Sound
Vol. II. Early Medieval Music
Oxford University Press: RCA Victor

This cantillation is oldest version of Lord's Prayer which has survived. It was sung in Spanish churches which - in their isolation under Moorish rule - belonged to the pre-Gregorian, Mozarabic rite. Four-tone.

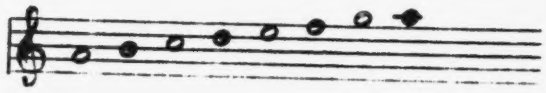
Sanctus
History of Music in Sound
Vol. II. Early Medieval Music
Oxford University Press: RCA Victor

Representative of oldest, simplest, and most central type of Gregorian music. Five-tone.

Ludwig van Beethoven: String Quartet No.15
in A Minor, Op.132
Third movement, "Song of Praise to God in the Lydian Mode"
Loewenguth String Quartet
Vox VBX 45



Jan Sibelius: Symphony No.2 in D Major, Op.43
(1902) Second movement, Andante
Philadelphia Orchestra; Ormandy, cond.
Columbia ML4131



Aeolian mode

Alberto Ginastera: from Scene I of Bomarzo (1967)
Opera Society of Washington; Rudel, cond.
CBS 32 31 0006

Motives

Ludwig van Beethoven/P.D.Q. Bach: Symphony #5
first movement with narrative
P.D.Q. Bach on the Air; Peter Schickele
Vanguard VRS-9268

Extremely applicable, if somewhat irreverent, look at ourselves busily tracking the theme through this familiar symphony.

Maurice Ravel: Boléro (c. 1927)
L'Orchestre de la Suisse Romande; Ansermet, cond.
London CM 9367

Extended melody repeated over and over while instruments are added and dynamics progressively increased. A "tour de force" of orchestration.

Camille Saint-Saëns: Symphony #3 (1886)
in C Minor, Op.78; second movement
The Hague Philharmonic Orchestra; Willem van Otterloo, cond.;
Feike Asma, organ
Epic LC 3077

Saul Goodman: Timpiana (1967)
Saul Goodman, Joe Jones
Columbia CL 1533

"This jazzy, swing-like number is based on a four-note theme played by the timpani and accompanied by the usual drum set." - Goodman

Robert Schumann: Cello Concerto (1854)
in A Minor, Op.129; third movement
London Philharmonic Orchestra; Sir John Barbirolli, cond.; Gregor Piatigorsky, cello
RCA Victor LCT 1119

One of Schumann's last works; motivic treatment between orchestra and soloist.

Igor Stravinsky: Agon
Boston Symphony Orchestra; Leinsdorf, cond.
RCA LM-2879

A "ballet for twelve dancers" consisting of 17 relatively short movements (not always separated by pauses in the music).

Kurt Weill: Ballad of Mack the Knife (1928)
from The Threepenny Opera;
text by Bertold Brecht
Original Cast album
MGM E3121

Vocal repetition of short, easily remembered theme.

Canons and Fugues

English rota or infinite canon, 'Sumer is icumen in'
History of Music in Sound
Vol. II. Early Medieval Music up to 1300
Oxford University Press: RCA Victor

For six voices, four on one canonic melody and two basses singing the other. Usually dated about 1240.

Johann Sebastian Bach: Art of the Fugue (1750)
Contrapunctus I, first fugue
Fine Arts Quartet
Concert Disc M-1230

Bach's last work - an exhaustive treatise dealing with all manner of contrapuntal devices. Here the theme is stated in its purest form.

Domenico Scarlatti: The Cat's Fugue
Sonata No.30
String Orchestra conducted by Tibor Serly
Bartok Recording Studio 005

Theme which consists of G(below middle C), B-flat, E-flat and F-sharp represents an unusual and unorthodox motive for scarlatti's time. The story is that the composer's cat walked across the keyboard while he was working - hence the title.

Benjamin Britten: Fugue from Young People's Guide to the Orchestra
Philharmonia Orchestra; Markevitch, cond.
Angel 35135

Set on a theme by Purcell, all the instruments of the orchestra from woodwinds to strings to brass to percussion in that order.

Fugue for Tinhorns from Guys and Dolls (1950)
By Frank Loesser based on Damon Runyon
Original Cast
Decca DL9023

Short Broadway musical treatment of discussion between local track enthusiasts.

Ludwig van Beethoven: Great Fugue in Bb Major, Op.133
Budapest String Quartet
Columbia ML5787

Detached from the Bb quartet and published separately a few days after Beethoven's death. In five sections, a formidable work.

Saul Goodman: Canon for Percussion (1967)
Saul Goodman Percussion Ensemble
Columbia CL 1533

Scored for four timpani, three snares, tom-toms, bongos, xylophone, marimba, bells, vibraphone, chimes, bass drum, and gong. Paraphrase on percussion and Bach. Each instrument is given a statement of at least one of the themes.

Ostinato; Passacaglia

Virgil Thompson: Passacaglia from Louisiana Story
Philadelphia Orchestra; Ormandy, cond.
ML 2087

Very easy to follow ... recounting a boy's adventures in robbing an alligator's nest of its eggs, concluding with the approach of the mother reptile.

André Raison: Trio en passacaille (1666)
History of Music in Sound
Vol. VI. The Growth of Instrumental Music
Oxford University Press: RCA Victor

This passacaglia is the Christe from an organ mass, 'Messe du Deuxiesme Ton'. The theme was borrowed by Bach for the first part of the bass of his Passacaglia in C minor.

Johann Sebastian Bach: Passacaglia in C Minor
Heinz Wunderlich, organist
Cantate 640 206

Classic example of Baroque passacaglia; continuous variations, bassed on a basso ostinato or ground bass, in slow triple meter.

Alban Berg: Wozzeck; Act I, Scene 4
(composed 1917-21; premiere 1925)
Choir and Orchestra of the Berlin Opera; Karl Boehm, cond.; Dietrich Fischer-Dieskau, Wozzeck; Karl Christian Kohn, the Physician.
Deutsche Grammophon SLPM 138 991/2

This scene is a character sketch of the Physician who, in his experiments with Wozzeck (Everyman), drives him to the murder of his wife and finally to his own destruction.

Stefan Wolpe: Passacaglia (1934)
David Tudor, piano
Esoteric ES 530

Anton Webern: Passacaglia, Op.1 (1908)
Orchestra under the direction of Robert Craft
Columbia K4L-232

Theme is chromatic using 11 of the 12 tones. Between the first and last chords of D minor, with the ordinary cadence, are six strong position chords leading the harmony far afield. Webern features: extensive use of triplets; transparency of instrumental writing; quietness of most of the music; rests, silence being very important - perfectly calculated time of 'memory and desire'.

Polyphony; Dialogue

Antiphonal Psalmody: Lumen ad Revelationem
Nunc Dimittis
History of Music in Sound
Vol. II. Early Music up to 1300
Oxford University Press: RCA Victor

One of few surviving examples in common use today of antiphonal psalmody, psalm or canticle verses with a refrain for the chorus inserted between the verses.

Johann Sebastian Bach: Concerto for Violin, Oboe, Strings and Continuo in D Minor;
second movement
Munich Bach Orchestra; Karl Richter, director
Archive ARC 3221

Tonal and contrapuntal interplay between violin and oboe.

Johannes Brahms: Double Concerto in A Minor
for Violin, Cello, and Orchestra, Op.102
first movement
Vienna State Opera Orchestra; Scherchen, cond.
Westminster XWN 18268

This time between strings.

Moussorgsky-Ravel: Samuel Goldenberg and Schmuyle from
Pictures at an Exhibition
Philadelphia Orchestra; Ormandy, cond.
Columbia ML 4700

Based on two sketches of Victor Hartmann's made in a small Polish town near Warsaw. One, slow, comfortable, pompous, represented by lower strings; the other, poor, excitable, voluble, a muted trumpet.

Gian-Carlo Menotti: Monica's Aria from The Medium
Ballet Society Production; Evelyn Keller, Soloist
Columbia OSL 154

Monica, a young girl, sings a song to Toby, a mute boy, who proceeds to improvise a dance. Out of this childish game develops a unique and moving scene in which Monica not only tells Toby of her love for him, but also speaks for the voiceless gypsy.

Walter Carlos: Dialogues for Piano and Two Loudspeakers
(1963)
Rurnabout TV 4004

Henry Cowell: Amiable Conversation (approx. 1920's)
Fairy Answer
Pianist, Cowell
Circle L-51-101

Tone-clusters, plucked strings combined with orthodox sounds.

Animal Sounds

Adriano Banchieri: Contrapunto Bestiale (1608)
Vocal Arts Ensemble; Richard Levitt, director
Counterpoint/Esoteric
Everest M 2408 601

The Nobili Spettatori is a three-voice introduction to the Contrapunto in which definite roles are assigned to the voices who imitate various animals.

Georg Friedrich Händel: The Cuckoo and the Nightingale
Concerto No.13; second movement
Gustav Leonhardt, organ, with Chamber Orchestra
of the Vienna State Opera; Ernst Kuyler, cond.
Oceanic OCS 25

The title of this work derives from the imitative effects in this movement.

Ludwig van Beethoven: Pastoral, Symphony No.6
in F Major, Op.68; second movement
Vienna Symphony Orchestra; Willem van Otterloo, cond.
Epic LC 3011

Subtitled: "Scene by the brook". A long wait produces the flute as nightingale, the oboe as quail, and the clarinet as cuckoo.

Camille Saint-Saens: Le Carnaval des Animaux (1886)
Philharmonia Orchestra; Geza Anda and Bela Siki, pianists,
Igor Markevitch, cond.
Angel 35135

1. Introduction and March of the Lion: two pianos and strings.
2. Chickens and hens: farmyard, woodwinds and strings.
3. Wild Asses: up and down the keyboards an octave apart.
4. Tortoises: piano accompaniment, strings play two tunes from Offenbach's Orpheus in the Underworld at a turtle's pace.
5. Elephant: double bass with sylph theme from Berlioz's Damnation of Faust and fairy theme from Mendelssohn's Midsummer Night's Dream.
6. Kangaroos: skipping on alternate pianos.
7. Aquarium: flute, harmonica, piano and strings painting a cool, watery picture.
8. Rabbits: two violins.
9. Cuckoo deep in the forest: clarinet with familiar theme over chords in pianos.
10. Bird: flight of the flute.
11. Pianists (!): at familiar exercises.
12. Fossils: Saint-Saens' Danse Macabre, "J'ai du bon tabac", "Ah! Vous dirai-je Maman", "Partant pour la Syrie", and Rosina's aria from Barber of Seville.
13. Swan: pianos accompany cello in original version of The Swan.
14. Finale: recapitulation plus a new tune.

Erik Satie: The Octopus (1914)
William Masselos, pianist
MGM Records E3154

This is number eleven of twenty-one pieces which were composed to serve as a musical counterpart to a set of drawings by Charles Martin. The set is called Sports et Divertissements.
"The octopus is in her cavern. She is playing with a crab. She pursues it. She swallows it, but in the wrong way. Haggard, she walks all over herself. She drinks a glass of salt water to recuperate. This drink does her a lot of good and gives her a new outlook on life."

Machines

Bahnfahrt (Train Trip)
Folkways Records FX 6160

A musical version of a sort of 'Toonerville Trolley', performed in Germany in the mid-twenties.

Heitor Villa-Lobos: Little Train of Caipira (1930)
Toccata from Bachianas Brasileiras No.2
Orchestre de la Radiodiffusion Française; Villa-Lobos, cond.
Angel 35547

Impression of a trip in a little train in the interior of Brazil.

Arthur Honneger: Pacific 231 (1924)
Philharmonic Symphony Society of London; Scherchen, cond.
Westminster XWN 18486

"I have always had a passion for locomotives. To me they are living beings, and I love them as others love women or horses. In Pacific 231 I have aimed not to imitate the noise of an engine, but rather to express in terms of music a visual impression and a physical sensation. Starting from objective contemplation, the tranquil respiration of an engine at rest, followed by the strain of getting under way, the speed increases steadily and reaches lyrical ecstasy at 120 kilometers an hour, with 300 tons hurtling through the night. As a subject, I have chosen an engine of the 'Pacific' type, number 231, used for heavy trains at high speed." -Honneger.

Alexander Mossolov: Symphony of Machines -
Steel Foundry (1928)
Folkways Records FX 6160

Image of a real steel mill.

Lejaren A. Hiller: Machine Music (1964)
Electronic Music from the University of Illinois
Heliodor (MGM) H-25047

For piano, percussion, and tape; by a Ph.D. research chemist now at the School of Music at Illinois by way of Milton Babbitt and Roger Sessions.

Gunther Schuller: A Twittering Machine (1959)
Boston Symphony Orchestra; Leinsdorf, cond.
RCA Victor LM-2879

Originally, Die Zwitschermaschine, a picture by Paul Klee, which Schuller set to music in a set of orchestral pieces called Seven Studies on Themes of Paul Klee. "A twittering machine ought to twitter. In addition, it seemed to me that a strict 'mechanical' application of latter-day serial techniques might be particularly and - I hope - humorously apt in this movement." - Schuller.

Mood, Expression

Erik Satie: Unappetizing Chorale to Sports
et Divertissements (1914)
William Masselos, pianist
MGM E3154

"For the 'stunted' and 'stupid'. I have written a serious and respectable chorale. This chorale is sort of a bitter preamble, an austere and unfrivolous form of introduction. I injected into it all that I know of boredom. I dedicate this chorale to those who do not like me. I withdraw."
- Satie

Gustav Holst: Mars, the Bringer of War (1914)
from The Planets, Op.32
Vienna Philharmonic Orchestra; Von Karajan, cond.
London CM 9313

Lonely House
Pete Rugolo and his Orchestra; June Christy, vocalist
Capitol T516

For accompaniment effects; loneliness, solitude.

Arnold Schoenberg: A Survivor from Warsaw
Op.46 (1947)
Vienna Symphony Orchestra and Academie Chamber Chorus;
Hans Swarowsky, cond., Hans Jaray, narrator
Columbia ML 4664

Gunther Schuller: An Eerie Moment (1959)
Ein Unheimlicher Moment from Seven Studies of Paul Klee
Boston Symphony Orchestra; Leinsdorf, cond.
RCA Victor LM 2879

Most freely associative of all seven studies; an eerie and suppressed tension suddenly explodes, only to collapse quickly into silence.

Portraits

Virgil Thompson: Five Portraits (1944)
Philadelphia Orchestra; Thompson, cond.
ML 2087

Bugles and Birds - Pablo Picasso, a representation of the man, not his work, save in so far as certain traits of character are marked in both.

Percussion piece - Mrs. Chester Whitin Lasell of Whitinsville, Mass., a California lady long resident in New England.

Cantabile for Strings - a young painter of Russian birth, Nicholas de Chatelain.

Tango Lullaby - depicts as a young girl Mademoiselle Flavie Alvarez de Toledo (now Madame Jean-Pierre Cazelles) daughter of the Marquis and Marquise de Casa Fuerte.

Fugue - a representation of the American conductor Alexander Smallens.

Alberto Ginastera: Scene 8 from the Opera Bomarzo
"The Portrait by Lorenzo Lotto"
Opera Society of Washington Orchestra and Chorus
Rudel, cond.
CBS 32 31 0006

Aaron Copland: A Loncoln Portrait
New York Philharmonic; Kostelanetz, cond.
Carl Sandburg, narrator
ML 5347

Edward Elgar: Enigma Variations, Op.36 (1899)
Halle Orchestra; Barbirolli, cond.
Vanguard SRV 184

Ilhan Mimaroglu: Bowery Bum (1964)
Turnabout TV 4004

After a study by Jean Dubuffet - "The outer formal character of the piece is determined by that of the drawing - a seemingly random maze of lines, through which appears a human figure, pathetic and droll." the sound source is a rubber band, suggested by the India ink in the drawing.

Place at Certain Time

Muezzin's Call to Prayer (c. 10th C.)
History of Music in Sound
Vol. I. Ancient and Oriental Music
Oxford University Press: RCA Victor

Middle East; Islamic place of worship. Although Islam has no liturgical music in the Western sense, the call to prayer quite early developed from simple speech to cantillation and, about this time, to melody proper.

Le Moulin de Paris (14th C.)
History of Music in Sound
Vol. III. Ars Nova and the Renaissance
Oxford University Press: RCA Victor

A busy mill in old Paris. Regarded as one of the first tone-paintings. Suspected also to be a play on the composer's name, Pierre de Moulins.

Charles Ives: Putnam's Camp from Three Places (1914)
in New England, second movement
Eastman-Rochester Orchestra; Hanson, cond.
Olympian (Mercury) MG 50149

General Israel Putnam's winter quarters during Revolutionary War. "Long rows of stone camp fireplaces still remain to stir a child's imagination", states the printed score. A fantasy of march rhythms in polymetric sections.

Ottorino Respighi: Feste Romane (1929)
NBC Symphony Orchestra; Toscanini, cond.
RCA Victor LM 1973

Roman festivals; not one or two fixed holidays, but a panorama of the festive spirit common to Roman life over the centuries. In four parts: the Circuses, the Jubilee, the October Festival, the Epiphany.

Richard Wagner: Overture to The Flying Dutchman
Orchestra of the Royal Opera House, Covent Garden;
Antal Dorati, cond.
RCA Victor LSC 6156

This is the first part of the overture depicting a ship in a storm at sea off the Norwegian coast. The music abates accordingly as the ship comes to anchor in the harbor.

Louis Gesensway: Franklin Square at Night from
Four Squares of Philadelphia
Philadelphia Orchestra; Ormandy, cond.
Columbia ML 5108

A trip through the high life of a big city ... bridge traffic ... an excursion into Chinatown ... the jive of bars and honky-tonks ... the wandering derelicts.

Spring

Claude le Jeune: Revecy Venir du Printans
Vocal Arts Ensemble; Richard Levitt, director
Counterpoint/Esoteric M 2408 601

Renaissance madrigal for five voices in which the refrain returns after the various solos for two, three, four, and five voices respectively.

Antonio Vivaldi: *La Primavera*
from *The Four Seasons*, Op.8
Stuttgart Chamber Orchestra; Karl Munchinger, cond.
Reinhold Barchet, violin solo
Richmond (London) B 19056

Baroque violin concerto in E Major. First movement, a rondo alternating a festive tune celebrating the coming of spring with bird song, then murmur of the spring breeze, finally the thunder and lightning of a coming storm. Slow movement describes a goatherd with faithful dog alongside. The last, a 12/8 Allegro, a pastoral dance for nymphs and shepherds in the sunshine.

Robert Schumann: *Spring Symphony* (1841)
Symphony No.1 in Bb, Op.38
Boston Symphony Orchestra; Munch, cond.
RCA Victor LM 1190

"Please, could you infuse into your orchestra, while playing it, a sort of longing for the spring, which I had chiefly in mind when I wrote it? The first entrance of the trumpets should sound as if it were from on high, like an awakening call." The players "should read between the lines ... how everywhere it begins to grow green, how a butterfly takes wing, how little by little everything appears that in any way belongs to spring." - Schumann.

Benjamin Britten: *Spring Symphony*, Op.44 (1949)
Orchestra and Chorus of the Royal Opera House,
Covent Garden; Britten, cond.
London 5612

Finale, which is a setting from a passage of Beaumont and Fletcher's "The Knight of the Burning Pestle", to which is later added the anonymous "Sumer is icumen in".

Alexander Glazounov: *Spring* (1898)
Concert Arts Orchestra; Robert Irving, cond.
Capitol P-8551

Ballet music. Harp flourishes mark the change from winter to spring. Various sections are designated as dances for the Rose, for Spring herself, and for a bird. The hot season approaches; Spring and her entourage disappear. It is summer.

Igor Stravinsky: Le Sacre du Printemps (1913)
New York Philharmonic; Bernstein, cond.
Columbia ML 5277

Part One is entitled The Fertility of the Earth. Subsections: Introduction; Dance of the Youth and Maidens; Dance of Abduction; Spring Rounds; Games of the Rival Towns; Entrance of the Celebrant; The Kiss to the Earth; Dance to the Earth.

Fire

Richard Wagner: Magic Fire Music from Die Walkuere (1856)
Philadelphia Orchestra; Ormandy, cond.
Columbia ML 4865

Part of Act III; Die Walkuere is the second opera in the cycle called The Ring of the Nibelungen. Wotan is summoning Loge, the god of fire, to surround Bruennhilde with fire. She has disobeyed him and has been condemned to remain thus isolated until a hero appears who is brave enough to rescue her.

Wolfgang Amadeus Mozart: Damnation Scene from Don Giovanni (1787)
Vienna Philharmonic and Vienna State Opera Chorus;
Josef Krips, cond.
London A 4406

The commandatore has accepted Don Giovanni's invitation to dinner. He urges the Don to repent his wicked ways. Don Giovanni, proud to the end, refuses and is condemned to the fire and brimstone.

Ravi Shankar: Fire Night (1961)
World-Pacific Records WP 1416

Recorded at the time of the great fires which devastated large areas of Los Angeles in the fall of 1961 - reflects the emotion and excitement of the holocaust.

Water

Lang Taur Sha (Yuan Dynasty 1271 - 1368)
History of Music in Sound
Vol. I. Ancient and Oriental Music
Oxford University Press: RCA Victor

Medieval Chinese tune arranged for the jeng, a half-tube zither with thirteen brass strings. The title means "Waves Washing the Beach".

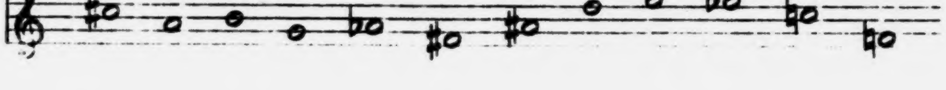
Claude Debussy: La Mer (1908)
Czech Philharmonic Orchestra; Roger Desormiere, cond.
Supraphon LPV 210

Three symphonic sketches: the first "From Dawn to Noon at Sea"; the second, "The Play of Waves"; the third, "The Dialogue of the Wind and the Sea". "The sound of the sea, the circular line of the horizon, the wind in the trees and the cries of the birds leave one with multiple impressions. And suddenly, without the slightest expectation, one of these memories emerges in a musical idea. It carries in itself its harmony." - Debussy.

Dodecaphonic

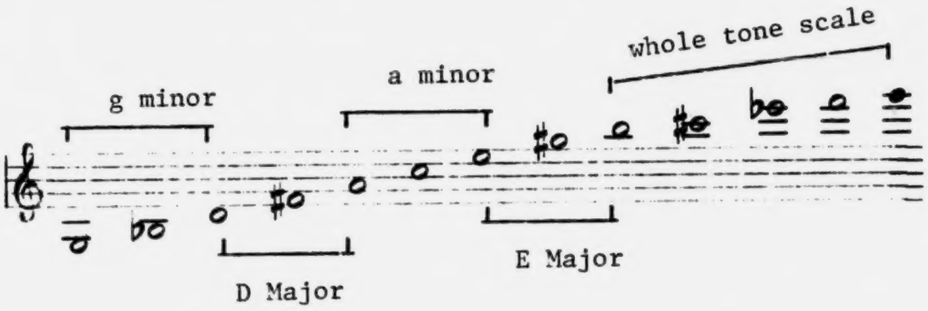
Arnold Schoenberg: No.5 from Five Piano Pieces
Op.23 (1923)
Glenn Gould, pianist
Columbia M2L-336

This selection from the five is the composer's first twelve-tone composition. "The tone row is a principle of economy ... which engenders perpetual variation ... responsible for the melodic unity of the piece ... also for the coherence and the logic of the harmony which is a vertical arrangement of the melody itself." - Rene Leibowitz



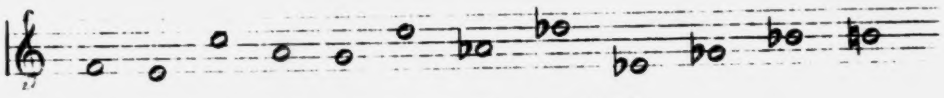
Arnold Schoenberg: Violin Concerto, Op.36 (1936)
Israel Baker, violinist; CBC Symphony; Craft, cond.
Columbia M2L 279

Dedicated to Anton von Webern. " ... one of the few violin concertos which are great music and perfect fiddle concertos at the same time ... called for a six-fingered violinist ... created the necessity for a new kind of violinist." - Leib. The row: A - Bb - Eb - B - E - F# - C - C# - G - Ab - D - F. Following are interesting chord and scale applications of the row. Tape begins with cadenza in last movement and runs through to end of the concerto.



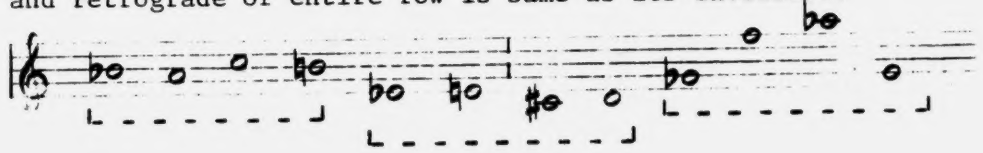
Alban Berg: Lyric Suite for String Quartet (1926)
Juilliard Quartet
Victor LMLSC 2531

Movements one and six are only ones which are entirely dodecaphonic. All movements are interconnected in a special way - basic theme or idea of one movement always appears in next. See Mood, Expression tape for additional movements.



Anton Webern: String Quartet, Op.28 (1938)
Complete music of Webern under direction of Robert Craft
Columbia K4L 232

" ... the ultimate polyphonic purity. Everything is variation and every musical idea is expressed with ruthless economy: there are only three kinds of interval*." - Craft
Row is comprised of three applications of B-A-C-H. If row is viewed as two hexachords, the second is retrograde inversion of the first; second in retrograde is inversion of the original; and retrograde of entire row is same as its inversion.



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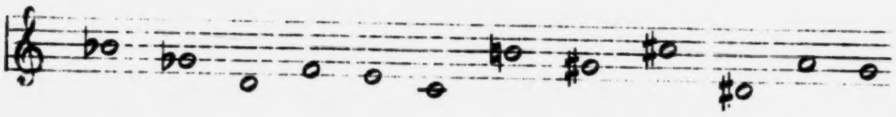
* small second, large second, small third, plus their inversions and extensions

Arnold Schoenberg: Prelude to the Genesis Suite,
Op.44 (1946)

CBC Symphony, Toronto Festival Singers; Craft, cond.
Columbia M2L 294

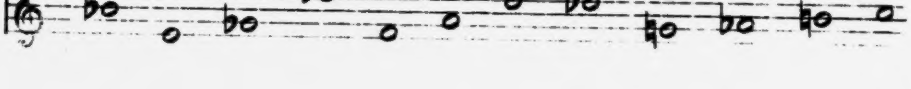
This is Schoenberg's contribution to an undertaking which was to have set the Bible to music! Original row and its inversion is divided into six-tone segments. These forms, their retrogrades and transpositions (5th up and 5th down) generate all tones in the piece.



Arnold Schoenberg: Variations for Orchestra
Op.31 (1928)

CBC Symphony; Craft, cond.
Columbia M2L 294

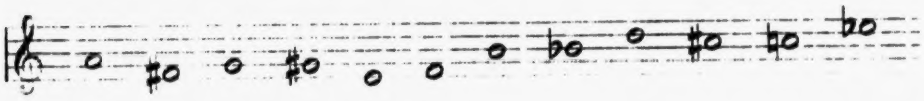
The first application of the twelve-tone technique in a composition for full orchestra. B-A-C-H* is the motto of the work heard first in the latter part of the introduction given a kind of mysterioso significance. This is never transposed and reaches its peak in the pesante which interrupts the final presto.



B-A-C-H = Bb-A-C-B ♮

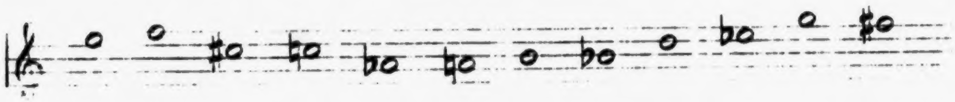
Anton Webern: Symphony, Op.21 (1928)
Complete music of Webern recorded under the direction of Robert Craft
Columbia K4L 232

"Silence has never before been 'composed' to such an extent ... small sonata-breadth pieces with expositions, developments, recapitulations, codas, and with his only material the purest of contrapuntal forms, the canon." - Craft. Scored for Clarinet, Bass Clarinet, Two Horns, Harp, First and Second Violins, Violas, Celli.



Arnold Schoenberg: Ode to Napoleon, Op.41 See Poetry tape
John Huston, speaker; Glenn Gould, pianist; Juilliard Quartet
Columbia M2S 767

Entirely free, moves perpetually throughout all possible tonalities, ending on E-flat Major. Row never appears as such; its peculiar construction permits only one transposition, one semitone higher. Important intervals are those which make up the piece's first chord: F - G# - C# - E. See further information under Texts listing.



Texts

Richard Strauss: Enoch Arden (1890)
Glenn Gould, pianist; Claude Rains, reader
Columbia ML 5741

Based on poem by Lord Tennyson published in 1864. The Odyssey is one of its analogues. Simply a melodrama set to music, alternating sound and text.

Arnold Schoenberg: Ode to Napoleon, Op.41 (1942)
John Huston, speaker; Glenn Gould, pianist;
Juilliard Quartet
Columbia M2S 767

Twelve-tone work; see description under Dodecaphonic. Based on poem by Lord Byron. Schoenberg's first musical work with political implications; protest of man against tyranny and dictatorship; Byron:Napoleon = Schoenberg: Hitler.

Arnold Schoenberg: Pierrot Lunaire, Op.21 (1912)
Bethany Beardslee; Columbia Chamber Ensemble
Columbia M2L 279

Cycle of twenty-one songs on French surrealist poems by Albert Giraud (translated into German by O.E. Hartleben). Employs technique known as Sprechstimme, a middle ground between speech and song. Scored for voice, violin, cello, flute, clarinet, and piano. Each song has different instrumental combination.

Franz Schubert: Gretchen am Spinnrade, Op.2
Elizabeth Schwarzkopf, soprano; Edwin Fischer, pianist
Angel 35022

On 'Meine Ruh ist Hin' from Goethe. Gretchen's lament from the Faust legend. Accompaniment is particularly colorful and appropriate to the text.

Anton Webern: Gleich und Gleich from Op.12 (1915-17)
Marni Nixon, soprano; Leonard Stein, pianist
Columbia K4L 232

Setting of "The Perfect Match" by Goethe:

"A flowerbell blossomed early
from the ground in lovely bloom;
there came a little bee and sucked:
They must have been made for each other."

Donald Lybbert: Lines for the Fallen (1967)
Phyllis Bryn-Julson, soprano
Odyssey 32 16 0162

Based on William Blake's "Lines for the Fallen" and Mass for the Dead. Other interesting things on this record are quarter-tone pieces by Ives, Macero and a tune for Ondes Martinot.

Luciano Berio: Circles
Time 58003

Setting of e.e. cummings. Electronic - musique concrete.

Luciano Berio: Ommagio a Joyce
Turnabout TV 341773

Setting of first page or so of Chapter 11 of Ulysses. This record also has excellent musique concrete and electronic tunes in addition to the Joyce.

Paintings

Erik Satie: Sports et Divertissements (1914)
William Masselos, pianist
MGM E3154

Set of 21 pieces was composed to serve as musical counterpart to a set of drawings by Charles Martin. Stravinsky was asked to do these originally, but his price was too high. Satie at first refused the job because he felt the fee was too high. He subsequently negotiated until the fee was low enough for him!

Moussorgsky-Ravel: Pictures at an Exhibition
(Original 1874)
Philadelphia Orchestra; Ormandy, cond.
Columbia ML 4700

Collection of pieces originally for piano, now often heard in this orchestral arrangement. Each piece illustrates a picture by the Russian painter Victor A. Hartmann (d.1873). The pieces are preceded and connected by a recurring promenade theme suggesting the walk from one picture to another, as at the memorial exhibition which inspired the composition.

Arnold Schoenberg: Five Orchestral Pieces (1908)
Op.16
Columbia Symphony; Craft, cond.
Columbia ML 5428

Gunther Schuller: Seven Studies on Themes of Paul Klee
(1959)
Boston Symphony; Leinsdorf, cond.
Victor LM/LSC2879

"'Twittering Machine', a delicate pen drawing tinted with watercolor, demonstrates the unique flavor of Klee's art; with a few simple lines, he has created a ghostly mechanism that imitates the sound of birds, simultaneously mocking our faith in the miracles of the machine age and our sentimental appreciation of bird song."
- Janson: History of Art; Prentice-Hall, pg.526

Ilhan Mimaroglu: Bowery Bum
Turnabout TV 34004S

"Visual Study No.3" after a drawing by Jean Dubuffet. Artist used only India ink; composer used sound of a rubber band with variety of amplification, filtering, speed changes, and superimposition. Other pieces on this record of electronic music by Avni, Carlos, Lewin-Richter.

Ilhan Mimaroglu: Agony
Turnabout TV 34046S

"Visual Study No.4" after painting by Archile Gorky.

APPENDIX B

MMCP

INTERACTION

Early Childhood Music Curriculum

Americole Biasini
Ronald Thomas
Lenore Pogonowski

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To

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Thank you

INTRODUCTION

The Manhattanville Music Curriculum Project (MMCP), a project of national scope funded by the U. S. Office of Education, has carried on extensive curriculum investigation at all levels of education since the summer of 1966. The purpose was to develop a learning program which allowed for complete and honest involvement with music on a personal level--to make the classroom a music laboratory where children could explore the nature and concepts of music on the level of their own insights and abilities.

INTERACTION, the Early Childhood Music Curriculum, is the MMCP learning program for children ages four through eight. It precedes the MMCP Spiral Curriculum which is focused on a concept core. INTERACTION is conceived as an open experience in creative musical exploration and experimentation. The principal goal is the experience itself, the involvement as a creative active musician. Encounters which allow for judgment making and practice in discovering new sounds, new ideas, and new meanings are vital aspects of this program. It also focuses on a basic sensitivity to the elements, materials, and expressive possibilities of music.

INTERACTION is process oriented. Therefore, there is little emphasis on any formal plan of musical concepts. Classroom experiences are structured around the developmental phases of musical exploration in ways which accommodate the wide variety of learning styles commonly found among young children. There are five such phases: free exploration, guided exploration, exploratory improvisation, planned improvisation, and reinforcement. Each phase identifies principal ideas, objectives for pupils, procedures for teachers and evaluative criteria. Sample series of encounters, which utilize discovery approaches and the pupil's intuitive and inductive reasoning powers, are also included.

In terms of sequence, this program is most flexible. It neither has a rigidly prescribed series of learning experiences nor a predetermined body of content. Although it is designed to accommodate the learning styles, cognitive insights, physical development, and emotional capacities of children from ages four to eight, it may be extended or shortened depending on the sensitivity of the teacher to the needs of the pupils.

Collectively, these fundamental elements of process and substance constitute the core of INTERACTION. In addition to the unique musical experiences identified in this program, classroom teachers and music specialists alike are encouraged to broaden opportunities for musical involvement and growth by incorporating a wide variety of adjunctive experiences commonly found in most comprehensive music programs. Some examples are large group singing, eurythmics, dancing, attending live concerts, playing in a variety of instrumental ensembles, etc.

This early childhood program in music has been developed for use by classroom teachers as well as music specialists. The results of the research indicated that classroom teachers did operate successfully with this music program at the nursery and primary levels of instruction. They were able to grasp the essence of the educational process central to this program; they demonstrated confidence and competence in dealing with basic music problems which arose from the pupils' inquiry as well as their own creative enterprise; and they exhibited a perspective of music and musical concepts which allowed for exploration, personal judgment, and genuine questioning. This is especially meaningful since in the vast majority of classrooms, music at early levels is the responsibility of the classroom teacher. According to a survey made by the National Education Association, "In three-fourths of the schools surveyed, the classroom teacher is solely responsible for some or all of the active (music) instruction."[1]

It is thus believed that music should be an integral part of classroom learning. It should not be a once-a-week special program divorced from the evolution of daily classroom dynamics. The position of the classroom teacher is unique. Aware of the potentials and limitations of her pupils, she can provide a wide range of open-ended learning experiences tailored to the needs and interests of her pupils in music as well as in other areas.

The music specialist in this setting serves primarily as a resource person. She is available to assist the primary classroom teacher in the specifics of music learning. She can help develop strategies, select related listening materials, and provide necessary instruments and equipment. She is also available to teach demonstration lessons in the classroom and to hold in-service workshops for teachers. In short, the music specialist is the classroom teacher's principal source of information, support and guidance.

One year of experimentation was undertaken with fifteen teachers of special education to see to what extent, if any, this creative and exploratory music curriculum might be appropriate for children with varying degrees of physical and mental impairment. The results clearly indicated that many of the strategies developed for INTERACTION could be adapted for use in special education classrooms of children ranging in age from six to eleven. Teachers of special education, therefore, are invited to review this program and to apply it to their situations by making whatever adjustments in design that seem necessary to meet the developmental needs of their pupils.

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[1] NEA Research Bulletin, Vol. 41, No. 2 (May 1963), pp. 56-59

PART ONE

RATIONALE

Every human being, to a greater or lesser degree, is capable of creative activity. This capability is revealed by man's propensity to probe the unknown, to experience the world imaginatively, and to form impressions from the sensory elements in his environment. The impressions which are most appealing to him are investigated further and cast in various combinations until the most satisfying and meaningful relationships are established. Man does this to develop a keener sense of self-awareness, to objectify his experiences, and, perhaps most of all, he does this for the satisfaction it gives him.

In many cases, unfortunately, creativity is stifled by the myriad forces of conformity fostered by tradition and social living. That is, society's environment is inhibiting to the creative capacities of many individuals. Precast images and standardized learning resolutions mitigate against man's inclination to engage in creative thought and action.

Creativity and the Child

The creative activities in INTERACTION, An Early Childhood Music Curriculum, attempt to reverse this process by creating a counter-atmosphere which is non-inhibiting and by developing techniques and methods of working which release rather than inhibit the creative impulse. The advantage of working with the young child in this setting is that the negative, repressive aspects of socialization have had less time to work on him and he has had less time to develop skills and attitudes which normally lead to idiomatic closure.

The creative impulse reveals itself most freely in an atmosphere of acceptance, i.e., one in which the child is free to explore all the possibilities of a given sound source or musical idea. INTERACTION provides for this condition by encouraging the child to explore freely, to maintain an always fresh vision and an openness to experience without premature structuring by the teacher. Free exploration of sound inevitably includes what to an outsider sounds like noise. It must be understood that noise (creative fallout) is essential to and part of the creative process in music. It is part of a means of assimilating and arranging information which leads, ultimately, to the symbolic codification of artistic expression. Symbolic codes grow out of a felt need to objectify experience. Other people's symbols do not necessarily contain meaning for us, unless we understand the process through which they were generated. John Holt remarks, "The only way to get meaning out of symbols, to turn other people's symbols into a kind of reality or a mental mode of reality, is by learning first to turn their own reality into symbols. They have to make the journey from reality to symbol many times, before they are ready to go the other way."[1]

In order to become intrinsically involved in music and to derive meaning from it, the child must be encouraged, assisted, and allowed to create it. Jean Piaget has said, "Even in order to understand we have to invent, or that is, to reinvent, because we can't start from the beginning again. But I would say that anything is only understood to the extent that it is reinvented."[2] INTERACTION reflects the educational implications of Piaget's observation in its process framework.

People, and children in particular, exhibit an amazing and little understood capacity for "teaching themselves"--for assimilating and ultimately organizing information which is in some way useful to them. Encounters in INTERACTION provide the child with opportunities to explore and to experiment on his own. (Requisite physical, psychological, social and emotional conditions are identified and made explicit in Part III under Learning Environment.) The child's exploration and experimentation lead to self-identification, an awareness of individual limitations and strengths. Once the learner has an opportunity to discover himself in these terms, the teacher is in a position to assist him further in the creative process.

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[1] Holt, p. 181. In How Children Learn (November 8, 1963 (p. 50),) Holt describes a cello experiment which sheds some light on "waste motion" and the discovery process. He took a cello into the classroom, and, rather than telling the students what it was, or how to finger it, merely let them "mess about" with it. In watching their experiments, he remarks: "It doesn't take a child long, by such steps to grasp the basic idea of the cello, the relationship of the bow, the string and the left hand. But while he has been figuring this out, he has been ceaselessly active. One could say that he is having too much fun--a weak word, really--playing the cello to want to take time to figure it out. A scientist might say that, along with his useful data, the child has collected an enormous quantity of random, useless data. A trained scientist wants to cut all irrelevant data out of his experiment. He is asking nature a question, and he wants to cut down the noise, the static, the random information, to a minimum, so that he can hear the answer. But a child doesn't work that way. He is used to getting his answers out of the noise. He has, after all, grown up in a strange world where everything is noise, where he can only understand and make sense of a tiny part of what he experiences. His way of attacking the cello problem is to produce the maximum amount of data possible, to do as many things as he can, to use his hands and to bow in as many ways as possible. Then, as he goes along, he begins to notice regularities and patterns. He begins to ask questions--that is, to make deliberate experiments. But it is vital to note that until he has a great deal of data, he has no idea what questions to ask, or what questions there are to be asked.

[2] Frank G. Jennings, "Jean Piaget: Notes on Learning," Saturday Review, May 20, 1967, p. 83.

In addition to individual exploration, the child learns much from his classmates. Much of what he learns is a natural outgrowth of pupil involvement in similar exploratory activities. Often, the child will evidence his sensitivity to the creative efforts of others by his attempts to imitate what he learns. The teacher can reinforce these aural perceptions, when it seems appropriate, by encouraging the child to imitate some of the musical discoveries of others and to adapt them to his own use. Other encounters should call for the direct interaction of the child with his classmates in the solutions of musical problems which involve cooperative planning. By engaging in these activities, the child develops greater musical insight, power and skill as well as empathy into the personalities and creative capabilities of other human beings.

For the young child, then, music provides a fundamental way of learning and knowing. As a dynamic process and a distinctive, definable and continuing body of content, it results in heightened receptivity to aural stimuli. Further, it allows for the assimilation and aesthetic structuring of aural data and its translation or codification in terms understandable by others. Eventually the child's unique perceptions, values, and attitudes lead to self-knowledge and a self-identification with his own creative abilities.

The Characteristics of Music

Throughout the long history of music there have always been present three dominant characteristics. First, music is an expressive medium. Through a distinctly unique and forceful language of sound, it conveys ideas and feeling. It is a way of knowing and experiencing, but it is also a method of communicating, of addressing the spirit of man. Because music has the power to affect man's mind and emotions with a unique intensity and breadth, the expressive content of music can not be translated into verbal terms. As Mendelssohn has said, "the thoughts which are expressed to me by music . . . are not too indefinite to put into words, but on the contrary, too definite."

The second characteristic of music is found in its continuing nature. It has existed as a reflection of man's experience and expressive desires for as long as our history records. It exists today, not only as a curatorial exhibition of historical times and other societies, but as a contemporary, living, and vital expressive medium. Most important is the fact that music has always been sensitive to those contemporary conditions and social structures of the time of its creation. As society changed so has the means, but not the intrinsic nature, of the art. It has evolved new patterns, new modes, and new techniques of organization in order to meet the new tempi, structures, and pressures of life and society. Music is a continuing art, always sensitive to and interpreting the present. It is neither a static medium nor a completed moment of the past. Aaron Copland describes it as ". . . in a continual state of becoming."

The third characteristic of music, perhaps the most important in curricular formation, is suggested by the first two. Music is a constant search for creative expression. Every significant musician through history has sought to extend the means of the art. He has not been content to merely duplicate the systems and idiomatic practices of his predecessors, but has found new means to meet the expressive demands he felt. Often this search has produced radical changes in music. Ideas of dissonance and consonance have been contradicted, and structural practices have been discarded as new expressive forms have arisen. Sound sources, rhythmical formations, harmonic textures, and even the relationships of the basic elements have undergone many revolutions. The pace of this search for new means within the art has been commensurate with the pace of man's total creative evolution. Today this search is undoubtedly the primary concern of the art.

These three fundamental qualities, the expressiveness, the continuing and current nature, and the vitality of the creative search, are the most inherent characteristics of music. They must therefore, be the most immediate responsibilities of the study, underlying every classroom experience and evident through every educational encounter.

Music and the Child

With the vital musical requisites for the study clearly defined in the foregoing, several factors concerning the nature of the learning program become evident. Immediately obvious is the requirement of breadth. Most urgently, the study must enable the child to "think" in the medium of music; he must have a conceptual grasp of the nature of the medium and understand the language of musical sounds. Simultaneously, the study must provide for growth of the power of activity within the means of the art. The power to act, to operate as a musician, is essential not only for its own value in allowing personal participation, but as a process for the development of understanding. The child must develop his capabilities to create, perform, conduct and be otherwise actively involved in the various musical processes if he is to fully grasp the medium. Without this personal active involvement the child becomes merely a musical spectator. While spectatorship may occasionally arouse interest, it is a most unreliable method of initiating and maintaining intrinsic concern.

In addition to the demand for breadth in variety of experience, the continuing nature of music demands a broad use of musical materials. Both the rich heritage and the contemporary vitality must be fused in in the study in such a way that the child develops a clear and unrestricted view of the timelessness of the art. This quality of the art, however, is not contingent on the timelessness of any one musical work. Any composition, or many compositions, are not the art, they are but moments in its history. Whether a piece is forgotten in time or continues in the repertoire, the art remains and continues to evolve. This perspective is best demonstrated in the field of literature where the works of Chaucer, Shakespeare, and Milton are not pretentiously positioned to the exclusion of contemporary verbal and artistic achievement. Their values are recognized but their form and language are not imposed on the child of today.

This necessity for breadth continues into the area of structural and manipulative techniques. To base the study, especially the earliest stages, predominantly on the rules of melodic harmonic, and rhythmic procedure which have not been used seriously by composers for at least six decades is to falsely represent the art. This forces the child to establish prejudicial judgments of right or wrong in music based solely on idiomatic practices. It is far more consistent with the art that the pupil's judgments be formed on the broadest principles of expressiveness, form, balance, and tension for which any idiomatic practice is but one composer's solution.

This requisite of breadth is stressed because two great dangers exist in the development of an effective learning program. The first is intellectual closure which occurs when the child's perspective is narrowed by restricted experience or an overemphasis on systematic procedures. Closure develops when the child's education narrows rather than broadens his intellectual curiosity--when his insights are so confined he is unwilling or unable to make judgments of new experiences.

The second danger is that the means of learning may become the end. This is of particular concern in the area of performance. Because of the physical demands and pressures of time required to develop instrumental or vocal technique, dextrous accomplishments are often substituted for musical insight. This situation may exist not only in the second grade where mastery of isolated musical skills, such as pitch production, becomes the child's goal, but at all levels.

Similarly, mastery of notation, a complex system of symbolism for the transcription and recall of notes, can so dominate the study that the reason for the symbolism becomes obscured. Note reading is substituted for conceptual understanding, and rhythmic computation, often divorced from a musical context, becomes a major activity.

The third characteristic of music, the consistent search to extend and expand the means of the art, clarified the atmosphere of learning which must dominate the study. The child must not be trapped by static methodologies which largely demand rote responses or recognition of commonplace factors. The study must be filled with the action of discovery. It is far more important in the classroom that the child regard himself as a creative musician, experimenting, interpreting, and discovering for himself the concepts and potentials of the art, than that he follow any prescribed pattern of teacher-dominated instruction. The essence of the art of music becomes most clear when the child explores for himself the nature of the interaction of the elements of music and becomes involved as a creative musician in a personal search for musical meaning. Studies devoted to an analysis of the experience of others or confined to performance of music are simply inadequate to convey the intrinsic and viable nature of the art. The atmosphere of learning must be one in which active exploration and personal discovery are the fundamental processes for learning. As Kline has said, "The logic of discovery is far more exciting then the logic of the discovered."[3]

In summary, the study must provide the child with the fullest experiences in music as dictated by the nature of the art. He must become involved in the total process, composing, performing, conducting, listening with critical awareness, and evaluating. His participation in these activities must always be in the spirit of a musician, not an imitator. The study must deal with the inherent concepts of the art and be so formulated that the child discovers for himself the nature of interaction and relationship of the elements that bring meaning to music. Finally, the materials of instruction must be drawn from the total spectrum of the art with primary emphasis on the materials of today's music. For the strongest bond between the musical art and the child is a sensitivity to contemporary life.

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[3] Morris Kline, Mathematics, A Cultural Approach. (Reading, Mass.: Addison Wesley Publishing Company, Inc., 1962.)

PART TWO

THE SHAPE OF THE CURRICULUM

Within the rationale of music and educational responsibility as described in the preceding section, it becomes obvious that the early childhood music curriculum must deal fundamentally with five areas: (1) the creative process itself; (2) the development of sensitivity to sounds, their interaction and musical nature; (3) an understanding of basic concepts of musical elements, their combination and manipulation; (4) the acquisition of the simple skills which allow the child to operate as a creative musician; (5) the development of positive attitudes toward music and self. These, therefore, become the basic cognitive, skill, and attitudinal goals of INTERACTION.

Goals

1. The creative process. The principal goal of INTERACTION is the experience itself, the involvement of a child as a creative, active musician. Experience provides for the child a fundamental way of learning and knowing. The child learns by taking part in diverse encounters; he is not taught, he learns by experience. Diverse encounters lead to the discovery of new sounds, new ideas and new meanings which result in heightened sensitivity to the elements, materials, and expressive possibilities of music. In addition the child learns to associate with others in a socio-musical context, to come to terms with them and with himself, and to make judgments and choices.

2. Aural sensitivity. Since sound is the language of music it is imperative that the educational program deal heavily with an exploration of sounds in a musical framework. It is essential that the child learns through experience not only to discriminate but to perceive the manner in which sounds are arranged (analytical thinking). Further, the child is expected to critically determine whether the arrangements of sounds are used effectively (judicial thinking). And finally, the child should be encouraged to consider alternative arrangements of the sounds under consideration (creative thinking). The emphasis is on an exploration of sounds, their nature and their expressive potential in a learning program conceived of and designed in terms of process.

3. Musical concepts. Through a sensitivity to sounds, it is possible for the child to participate in the discovery of the basic concepts of sound manipulation and organization. An understanding of these concepts allows for order and responsible interpretation. These concepts must be discovered in the process of exploring the interaction and expressive possibilities of sounds. It is the interaction of the various sounds and the totality of their

influence on each other that determines the meaning. Musical understanding implies the ability to comprehend meaning from the total effect of these combined sounds.

4. Skill development. Since music exists only in an aural form, each child must gain the simple skills which allow for a musical realization of his musical ideas. This includes basic performance skills, conducting skills, skills of aural discrimination and, to the limited degree demanded by his own developing insights, translative (notational) skills. Basic performance and conducting skills require sufficient muscular development and mastery of the techniques to meet the demands of performance. Skills of aural discrimination refer to the identification of pitches, durations, timbres, dynamics, the relationships of combined sounds, and the recognitive tasks associated with extended listening. Translative skills are those used to work with notation. Notation is a graphic procedure devised to preserve musical ideas and to allow for the reproduction of these ideas. It is a storage and retrieval system, not a way of acquiring musical sensitivity or sensibility. Experience shows that children can assimilate translative skills easily when the musical concepts and the reason for translation are established. Imposing notational systems upon young children too soon will interfere with this developmental process. Therefore, translative skills are to be considered only when the child demonstrates a readiness and need for notational devices.

5. Attitudes. In addition to the skill and cognitive goals described above, it is urgent that the pupil develop within himself those attitudes toward music which assure that the educational experiences have intrinsic meaning and are personally rewarding. These attitudes are not only about music but about himself as a creative, responsive, and respected individual who has the power to control and express his thoughts and to use music as a medium for personal fulfillment.

Many of these goals can be gained through the inductive and exploratory processes employed in the curriculum. From the outset the child is involved as a musician, free to intuitively explore, to make judgments and to use his own logic.

Children and Learning

In order to become intrinsically involved in music the child must be allowed to discover it through the processes of creating, performing, listening and judging. The child must be free to experiment, improvise with musical ideas, to pursue unproductive avenues of exploration and to discover for himself that these avenues are unproductive. Exploration and experimentation lead to self-identification, an awareness of individual limitations and strengths. As the child becomes aware that he has succeeded, in part, in expressing what he has to express, he may gain in confidence and come to an awareness of his broadening personality by virtue of the recognition of even partial success.

Knowledge arises and becomes organized as the child interacts with his environment. Piaget maintains that the central idea in the structure of knowledge is the operation. He explains: "Knowledge is not a copy of reality. To know an object, to know an event, is not simply to look at it and make a mental copy, or image, of it. To know an object is to act on it. To know is to modify, to transform the object, and to understand the process of this transformation, and as a consequence to understand the way the object is constructed. An operation is thus the essence of knowledge; it is an interiorised action which modifies the object of knowledge."[1]

Piaget's theory leaves little question as to the importance of learning through activity. The child comes to an understanding of music through his own efforts, i.e., the manipulation of sound-producing materials and experimentation of musical ideas or notions. The child's judgments, efforts, and accomplishments must be measured against his own developing insights rather than against static and imposed views.

For example: Joanna Parker is five years old. She transferred from Backus Village Gate to our morning kindergarten class. Joanna was an unhappy girl and was apparently having as much difficulty relating to her peers in her new environment as she did in her last. She uttered not a word for over a month, but gradually began to lift her head away from her chest high enough to glance around the room and catch a glimpse of her classmates exploring instruments every which way, improvising music of their own, and playing their music in front of a strange machine that played it back to them.

She was still shy and very withdrawn, but as the days slipped by her glances became serious observations as she inconspicuously began to move about the room to get a closer look at all the activities. She observed Michael busy with the bongo drums and overheard him say to a group of his friends, "Don't bring all that work over here near me--I'm practicing. I'm trying to get a good beat and that's hard!" Michael's friends respectfully took their instruments to work near the flannel board. Joanna wandered over to a group of students who had just listened to "Hoedown" by Aaron Copland. She caught some of the responses. "It makes me happy it sounds so good." "It makes me want to dance all around the living room." "It makes me want to dance on my head, toes, on my thumb." "How about your nose?"

On another day she carefully moved to an area in the room where a group of pupils playing familiar and unfamiliar instruments were struggling to follow two youngsters who were waving their arms wildly in the air.

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[1] Piaget, J. "Cognitive Development in Children: the Piaget Papers." In R.E. Ripple and U.N. Rockcastle (Eds.), Piaget Rediscovered: a report of the conference on cognitive studies and curriculum development. Ithaca, New York: School of Education, Cornell University, March 1964.

Finally, the flagging limbs ceased and the sound dwindled away. David promptly addressed the two conductors, "I can't play two ways at once." The next time around Lisa played the role of the conductor.

Joanna's curiosity and growing enthusiasm got the best of her. Within s short period of time she became an avid explorer in the world of sound, a contributor to the sound materials center, a participating performer, and a sensitive listener. Joanna communicated first with sounds she was able to offer and arrange into forms pleasing to her and acceptable to the other pupils. She grew in confidence and increasingly became more active when interacting with her environment and peers. By the standards of her classmates, Joanna is considered a leader. More important, she now senses her own personal power as an imaginative and creative person.

The foregoing suggests that the education of the young child is nurtured, on the one hand, by constant experimentation with the objects and materials in his environment and, on the other hand, through interaction with other persons. He begins to develop musical insights, powers and skills through the manipulation of sound sources, aided by his tremendous curiosity about the unknown. Experimentation gradually becomes more purposive and controlled--each pupil producing recognizably different music from that of the other pupils.

Children are interested in the playing of others and learn much from them. In early group work they play quite separately from each other. However, as they gain experience in playing together, group improvisation reaches a level of integrated response--it becomes a kind of communication for the group. Out of this synergy musical ideas evolve and, in subsequent activities, are nourished and brought to new levels of refinement.

The nature of pupil involvement in creative, open-ended music experiences revealed that certain psychological and social factors relate to the production of music and to increased understanding of it. Thus, developmental factors were identified and formulated into an operational schema known as the Developmental Phases of Musical Exploration (DPME).

The Developmental Phases of Musical Exploration

The DPME identifies and describes five distinct phases of the creative process in music for young children. These phases are not terminal; rather they are developmental and cumulative. The child progresses through these phases many times--returning to each one at ever increasing levels of insight and refinement. Experience has shown that the fostering of creativity among children is not contingent upon strict adherence to a given sequence of these phases. Varying levels of musical knowledge, intuition and interest are but a few of the factors which account for idiosyncratic patterns of thought and process.

However, most children did engage in a common sequence of phases as they proceeded through the creative process. Therefore, the following sequence of phases has been identified as natural and productive for young children: (1) free exploration; (2) guided exploration; (3) exploratory improvisation; (4) planned improvisation; (5) reinforcement.

Phase I - Free Exploration. Every child, to a greater or lesser degree, is capable of creative activity and has the desire to engage in such activity. The first step in fostering pupil involvement in creative activity in music is to encourage the manipulation of a wide range of sound-producing materials (sound sources). Encounters in free exploration, therefore, provide the child with opportunities to discover and explore a wide variety of sound sources without predetermined goals. The child's explorations are motivated largely by his natural curiosity to probe and to experience the unknown. Much of Piaget's work on concept development indicates that the child learns to understand his environment by what he does to it, not vice versa. Therefore, the sounds the pupil makes himself must be the starting point.

Further, experience has shown that the creative impulse reveals itself most freely in an atmosphere of acceptance, i.e., one in which the learner is free to explore all the possibilities of a given situation. Children will experiment endlessly with their capabilities for producing sounds in such a setting. Reproducing certain sounds over and over again gives them clearer understanding, better control and a great deal of personal satisfaction. The more extensive these initial experiences are, the more intensive future explorations with new objects and instruments will become.

The foregoing provides the operational framework for identifying the objectives for the child in this program. They are as follows:

Skill objectives:
1. To explore a wide variety of sound sources to discover a wide variety of sounds.
2. To explore a wide variety of ways of producing sounds on the sound sources provided.

Cognitive objectives:
1. To develop awareness of a great variety of sounds by identifying sounds in their auditory environment and sounds deliberately produced by themselves and others.
2. To perceive the differences and similarities in sounds and to identify them operationally, in ways which relate to personal experiences, and by describing their physical characteristics.
3. To identify a wide variety of sound sources in their environment.

Attitudinal objectives:
1. To engage freely in exploratory activities initiated by

self and teacher.
2. To share discoveries of new sounds and sound-producing techniques with the class.
3. To develop an openness to experience so that they maintain an excitement for discovery.

The function of the teacher in this phase is to involve the child in sound-producing activities which will facilitate the behaviors and learnings identified in these objectives. The first step is to cultivate an air of expectancy and excitement in the classroom; one which allows for spontaneous and total involvement. The teacher can nurture this condition by encouraging the child to engage freely and repeatedly in the exploration of sound sources which excite the imagination of the child and by exhibiting her own enthusiasm about the child's discoveries.

Next, it is important that the teacher develop within the child an openness to experience and the ability to derive meaning from this experience. These objectives may be realized by encouraging the child to withhold final value judgments until after the exploratory period. The child should then be encouraged to make his own observations, perceptions, and interpretations of sounds produced by himself and others. There are many clues for determining the developing awareness and understanding of the child. These can be determined by encouraging the child to identify his perceptions of the differences and similarities in sounds. He may do this operationally, in ways which relate to personal experiences, and by describing their physical characteristics.

Finally, there is the need for evaluation. Evaluation is inherent in all facets of the creative process and must be included, therefore, as an integral part of each phase of the DPME. Its purpose is to assist the teacher and the pupil in determining to what extent the objectives of each phase have been realized. Assessment in this respect reveals vital information about the musical development of the child and guides the teacher in designing new encounters tailored to the child's expressed needs. Skill objectives, for the most part, can be assessed by observing the exploratory behavior of the child and considering the following sample questions: How are the sounds produced? Are the sound sources within the technical grasp of the child? Is the supply of sound sources sufficient to involve all pupils?

Cognitive gains in free exploration can be assessed largely by considering questions which relate directly to the cognitive objectives, i.e., To what extent can the pupil identify a wide variety of sound sources in his environment? How does the pupil perceive the differences and similarities in sounds?

Objectives in the attitudinal domain can be assessed by raising the following sample questions: To what extent does the child engage freely in exploratory experiences? To what extent does the child share his discoveries with the class when it seems appropriate? To what extent does the child exhibit an openness to the experiences? How is this openness demonstrated?

In free exploration, then, emphasis is placed on the exploration and identification of a wide range of sound sources. These materials and their resultant sounds serve as the child's point of entry into the creative process in music. The intensity of the child's musical involvement at subsequent levels of the DPME bear heavily on the quality of the encounters in free exploration. They must offer him some degree of success and provide him with a wide spectrum of sounds which stir his creative sense. It is imperative, therefore, that these early experiences fully absorb the child's interest and imagination.

Phase II - Guided Exploration. As an extension of free exploration, guided exploration provides encounters which encourage children to investigate their sound sources in greater depth. These experiences are necessary because children often experience some difficulty discovering new sound-producing techniques. Also, they often fail to perceive additional possibilities for producing new sounds which are necessary to sustain enthusiasm and involvement. While these two reasons are closely related, they strongly suggest encounters which lead to the discovery of new ways of manipulating sound sources on the one hand and encounters which focus on sound proliferation, identification and classification on the other.

The objectives, then, for guided exploration are borne out of the foregoing rationale. They are as follows:

Skill objectives:
1. To explore a given sound source for additional sounds and sound-producing techniques.
2. To explore a given sound source with a focus on qualitative factors.

Cognitive objectives:
1. To identify impressions initiated by newly-discovered sounds.
2. To classify sounds according to their acoustical parameters, i.e., timbre, volume, duration and pitch.

Attitudinal objectives:
1. To listen and react to aural and other sensory stimuli offered by the teacher and other pupils.
2. To perceive the uniqueness of other people and the world around them.

The function of the teacher in this phase is to determine, as nearly as possible, the individual developmental needs of the child and to design encounters which will provide for these needs in the most direct and productive ways. There is the pervasive need to develop diverse sound-producing techniques to vary and intensify the child's exploration. Often these exploratory possibilities can be enhanced by focusing the child's attention with words, questions, pictures, musical and other aural stimuli, etc. Contrasting words such as walking and running, sliding and jumping, whispering and screaming, crawling and skipping, etc., suggest different movements in time, different volume levels, different techniques for producing sounds and pitches. Contrasting pictures serve to elicit similar responses.

Questions such as, "Can you imitate Johnny's sound?", "Can you make a sound very different from Johnny's?", etc., also serve to direct attention to new technical possibilities. Tape loops of specific sounds and sound patterns are yet another way to focus attention on technical possibilities. Another procedure is to ask the child to perform the following sounds in imitation of the teacher or another child: tapping a pencil on a hard surface, dropping a book, rubbing hands together, walking across the room using heavy footsteps, light footsteps, etc.

While the stimuli mentioned above are designed to elicit diverse sound-producing techniques from the child, they also result in the perception of new sounds. Implicit in this is the need for developing the child's sensitivity to the nature and character of a wide spectrum of sounds and the need for developing his ability to commit the aural impressions to memory for future recall. Continual encouragement to listen and to react to aural stimuli offered by the teacher and other children will go a long way toward developing the child's aural sensitivity. In addition, encounters which appeal to the child's natural sense of play, inquiry and discovery will result in diverse sounds and increased aural sensitivity.

Since music is aural and temporal, it is necessary to develop memory to enhance one's perception, understanding and appreciation. Jerome Bruner has this to say about developing memory, "Perhaps the most basic thing that can be said about human memory, after a century of intensive research, is that unless detail is placed into a structured pattern, it is rapidly forgotten."[2] INTERACTION provides for this by offering the child several structural patterns: (1) the classification of sounds according to the techniques necessary for producing the sounds; (2) the classification of sounds in ways which relate to personal experiences; (3) the classification of sounds in ways which describe their physical characteristics (acoustical parameters).

These structural patterns, singularly or in combination, offer the child a frame of reference for assimilating new aural stimuli and a systematic construct for committing these impressions to memory for future use. The role of the teacher in this cognitive objective is to continually encourage the child to identify the outcomes of his exploratory efforts in ways which are compatible with his individual learning style.

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[2] Jerome Bruner, The Process of Education. New York: Vintage Books, 1963.

As in free exploration, assessment of the skill objectives in guided exploration can be made by observing the exploration of the child and by focusing on the following sample questions: To what extent does the pupil explore a given sound source for additional sounds and sound-producing techniques?; How are the additional sounds produced?; To what extent does the child explore a given sound source with a focus on qualitative factors?; On which qualitative factors does the child focus?

Cognitive objectives in this phase can be dealt with largely by considering questions which relate mainly to the perception and classification of sounds. Sample questions are: To what extent does the child identify impressions initiated by newly-discovered sounds?; What are these impressions?; To what extent does the child classify sounds according to the techniques used in producing these sounds, to ways which relate to personal experience, and according to acoustical parameters?; How does he describe the sounds?

Attitudinal objectives in guided exploration relate to the child's reactions to the sounds themselves and to his sensitivity to the efforts of others. At this point the teacher should direct her attention to the extent to which the child listens and reacts to aural and other sensory stimuli offered by other pupils. Is the child genuinely interested in the sounds made by others? Does the child seem to be developing some awareness of the uniqueness of others and the world around him? While some of these questions seem to transcend the realm of music per se, they, in fact, direct themselves to those humanistic values which are most central to the aesthetic experience at its highest level.

As an extension of free exploration, then, encounters and materials are designed in guided exploration to encourage the child to investigate his sound sources in greater breadth and depth. The teacher has the major responsibility for maintaining the child's interest and for guiding him in discovering other exploratory possibilities. The results are that the child accumulates a vast number of aural, physical and sensory impressions which add to his ever increasing experiential frame of reference.

Phase III - Exploratory Improvisation. The cumulative outcomes of free and guided exploration, cast as they are in experiential molds, result in heightened sensitivity and receptivity to aural and other sensory stimuli. The massive creative interaction of children with each other and with numerous sound-producing materials leads to new levels of awareness and insight. In short, these encounters enable children to perceive the "data" of musical experience more clearly.

The next step in the creative process in music is the discovery of new relationships of sounds and the structuring of these relationships into a variety of expressive combinations and patterns. As children continue their exploration of varied sound sources, the sounds produced often suggest certain relationships. Children learn, for instance, that the expressive implications of a sound may vary considerably when it is preceded or followed by other sounds. Also, that the nature of a sound may change considerably when produced simultaneously with other sounds. Children delight in exploiting these relationships of sounds by organizing them into a variety of freely structured patterns. This represents their intrinsic concern for creative expression. Some of the musical outcomes are accidental, others are intentional. As they gain in knowledge and control they begin to develop a personal idiom or style which lends itself eventually to group improvisation.

In the early stages of group improvisation, most children are primarily interested in their own unique contributions and are likely to go their own way, obliterating all competition or interference. This indicates that they are still concentrating on their own discoveries of tonal relationships and expressive patterns. However, as this activity is prolonged over a period of time, children become increasingly sensitive to the sounds around them and begin to relate to them. Group improvisational characteristics begin to take shape and often evoke heightened emotional responses.

The operational objectives for children in exploratory improvisation, then, are suggested by the demands of the processes just described. They are as follows:

Skill objectives:

1. To repeat their own musical ideas and to imitate the sounds and musical ideas generated by others.
2. To develop greater technical control for repetition and imitation of sounds and musical ideas.

Cognitive objectives:

1. To organize sounds into a variety of schemes.
2. To adapt musical ideas to their own manner of sound organization.
3. To identify musical ideas according to their unique characteristics.

Attitudinal objectives:

1. To become increasingly aware and sensitive to musical sounds and ideas of others by developing an enthusiasm for what they hear and by experimenting with their ideas.
2. To exhibit sensitivity to the creative efforts and products of others.

The first task of the teacher in this phase is to assist the child in discovering and assimilating new relationships of sounds. This can be accomplished, in part, by encouraging the child to repeat sounds which appeal to him by applying the same performance techniques. Then the child should be encouraged to relate these sounds to each other in a variety of ways. Finally, the child should repeat the relationships which are most satisfying to him for as long as his interest and enthusiasm allow.

The next function of the teacher is to assist the child in discovering varied arrangements of these relationships into structures which are immediately expressive and meaningful to him. In this regard the teacher should encourage the child to explore freely a variety of organizational schemes. Further, the child should be encouraged to listen carefully to other children for musical ideas which seem appropriate for his expressive purpose. In this, the child should identify, in his own terms, the unique characteristics of his musical ideas and the musical ideas of others.

In addition to the concern for developing sensitivity to the structural schemes of others, the child should be encouraged to empathize with their musical ideas by relating to them in ways which are personally meaningful. This sensitivity can be enhanced by encouraging the child to express his reactions, impressions, feelings, etc., to these musical experiences in constructive terms. This process of relating musical experiences to an experiential frame of reference tends to personalize the encounters for the child--thus making them more meaningful.

Evaluation of the skill objectives in exploratory improvisation can be made by considering questions which relate directly to the operations expected of the child on the one hand, and by considering questions which allow for a variety of outcomes on the other. Some sample questions are as follows: To what extent does the child attempt to repeat original musical ideas? Are the repetitions successful? Why? What is the nature of the repeated musical ideas? Does the child realize that he is successful? Is the child developing greater technical control of the sound sources? How does he exhibit this greater technical control?

Questions such as those following will assist in evaluating cognitive outcomes: How does the child organize his sounds? How does he adapt musical ideas to his own manner of sound organization? Does the child identify musical ideas according to their unique characteristics? Which characteristics does he identify?

Attitudinal objectives can be assessed by identifying the extent to which the child becomes increasingly aware and sensitive to the musical sounds and ideas of others. How does he exhibit this sensitivity? The teacher should ask herself this question; Are all children given sufficient time and latitude to express their personal reactions, impressions, feelings, etc., to the musical offerings? And, are their reactions honored?

The principal purpose of exploratory improvisation, therefore, is to provide the child with opportunities to discover and assimilate new relationships of sounds and to arrange these relationships in ways which are expressive and meaningful to him. His readiness and eagerness to do this reflects on his intrinsic concern for creative expression at ever increasing levels of sophistication and refinement. Some of his musical realizations result from imitating and adapting the ideas of others to his own manner of sound production and sequence. Other outcomes result from his own explorations and broadening insights. The additive effect is the discovery of one's self as an emerging creative person--a dramatic and compelling discovery for a person at any age level.

Phase IV - Planned Improvisation. This phase of the DPME represents the need for children to organize their newly-discovered patterns and combinations of sounds into compositions which are most expressive and aesthetically satisfying to them. Exploratory improvisation will have generated many possible arrangements of sounds for children to consider. The creative challenge at this point is to select those which seem most promising and to develop and organize them in ways which communicate the childrens' musical ideas most satisfactorily to themselves and to others.

The process of limiting one's self to a few musical ideas at one time can be difficult for many young children. Often, the inclination is to use all their resources and discoveries in one composition, which usually results in a lack of stylistic consistency, clarity of content, and creative intent. The teacher, therefore, plays a major role in assisting children in delimiting their choice of materials in ways which are described later in this section.

The involvement of children at this level of creative activity fosters the development of more sophisticated skills and insights. Children quickly realize that their performance skills must be refined if more complex musical ideas are to be performed accurately. Also, it is soon realized that increased dextrous proficiency allows for the consideration and testing of musical ideas in a number of satisfying ways. Children learn that the ways in which sounds are varied contribute to the expressiveness and the meaning of a composition and that the musical ideas heard in one composition can suggest possibilities for other compositions. And finally, children begin to realize that organized sounds may have meaning in relationship to ideas, incidents, or broad feelings which are not common to any of the sounds. Many times these implied responses cannot be easily described, but are felt inside.

Herein lie the bases for identifying the objectives for pupils in planned improvisation. They are as follows:

Skill objectives:
1. To refine technical skills so that their musical ideas are performed to their satisfaction.
2. To consider and test their musical ideas in a variety of ways to achieve the ultimate in satisfactory performance.

Cognitive objectives:
1. To organize their sounds and musical ideas in expressive and meaningful ways.
2. To identify the ways in which sounds are arranged in the planned improvisation.
3. To determine whether the arrangements of sounds are used appropriately in the planned improvisation.
4. To determine how the musical ideas heard in the planned improvisation can be used in other ways or how they can suggest possibilities for other improvisations.

Attitudinal objectives:
1. To see themselves as creative persons.
2. To respond to the planned improvisations in ways which reflect a deeper sense of subjective awareness.

The teacher can facilitate the attainment of these objectives by providing the motivation and support as required by the child's creative involvement. The child needs to be assured by his teacher that he is capable of performing some of his musical ideas adequately and that he has the potential for refining his technical skills to the level at which he can communicate his most complex musical thoughts effectively. Skill development requires adequate space, appropriate materials, and sufficient time. An elaboration of these conditions can be found in Part III under Learning Environment.

Further, the teacher must assure the child that he has a sense of aural logic--a musical sense. He should be encouraged to organize his musical ideas in ways that are expressive and meaningful to him. In doing this, the child should make his own observations, interpretations, and conclusions regarding musical ideas used. These reactions will give the teacher useful insight into the child's musical thoughts, his attitudes, and his evolving aesthetic frame of reference.

Assessment of the skill, cognitive and attitudinal objectives in this phase of the DPME can be made by focusing attention directly on the specific operations identified in each objective. Attention can be directed to the skill objective by considering these sample questions: Is the child refining his performance skills to any degree? If so, how is he accomplishing this? In what ways does the child consider and test his musical ideas? These and other related questions will assist the teacher in attending to the child's technical needs.

Assessment of cognitive objectives calls for attention to details of structure, design and creative extensions. For example; How does the child organize his musical ideas? Which arrangements of sounds does he identify in the planned improvisation as appropriate and inappropriate? To what extent does the child determine how the musical ideas heard in one composition can be used in other ways? Sensitivity to the child's creative insights will aid the teacher in designing new encounters to further enhance this development.

The attitudinal objectives of this phase bear heavily on the child's impressions of himself as a creative and imaginative person. It is important that he perceive himself positively in this regard so that he will continue to participate in musical activities and develop a deeper sense of subjective awareness. The teacher, therefore, must be sensitive to ways in which the child evidences an awareness of himself as a creative person. Does he participate willingly and freely in planned improvisations? Can he identify stimulating problems and establish reasonable operational limits for himself? Does he realize some degree of success from his creative efforts?

Planned improvisation, then, provides the child with opportunities to organize his musical ideas in a variety of ways which are most expressive and meaningful to him. By establishing limitations for himself or by considering those proposed by the teacher, the child directs himself to this creative task. He draws from his accumulated sounds and musical ideas to make musical judgments regarding this problem. The urge to communicate his most sublime musical conceptions compels him to further develop and refine his performance skills. Eventually, these creative efforts result in a deeper sense of subjective awareness--the realization of those qualities which are most central to the condition of humanness.

Phase V - Reinforcement. Sounds can be made in a variety of ways on many different objects. These sounds can be fascinating and fun to make. The expressive implications of these sounds may vary considerably when they are sounded in various sequences and vertical combinations. Children soon learn that they can manipulate and organize the materials of music in ways that are satisfying and meaningful to them. A new sense of being is discovered--they can create, feel, think, evaluate, reject, interpret, control, express, reason, fashion sounds to their will.

This is the eventual outcome for children who engage repeatedly in the exploratory and improvisational phases of the DPME. The development of this operational level of thought, appreciation and practice demands that children progress through these phases many, many times. Herein lies the key. Repeated encounters with new sound sources, materials, musical ideas, etc., are required to assure increasing levels of musical insight and refinement.

This emerging sense of creative insight and operational powers must be nurtured if it is to be kept alive. The principal purposes of the reinforcement phase of the DPME, therefore, are to diversify and intensify the discoveries made by children in the exploratory and improvisational phases, to sustain a high level of enthusiasm, and to perpetuate their continued involvement in the developmental phases of musical exploration.

In operational terms, the objectives for children are as follows:

Skill objectives:
1. To engage in more intensive investigations of performance techniques.

Cognitive objectives:
1. To develop other expressive possibilities with the basic musical ideas acquired through the first four phases.
2. To extend their musical frames of reference by listening to recordings of music representing a broad spectrum of music periods, styles, and practices.

Attitudinal objectives:
1. To identify new musical factors which are satisfying to them, as well as those which are not.
2. To find meaning on a plane beyond analysis of mechanics, techniques, or even concepts.

The teacher can assist the child in reinforcing his musical ideas by diversifying and intensifying the encounters. This may be accomplished by varying the extent of creative demands, by allowing the child to frame part or all of the encounter, by encouraging him to organize his musical ideas in other ways which are expressive and meaningful to him, etc. These varied activities aid the child in assimilating what he has learned into an expressive musical framework. In addition, they lead to the discovery of new relationships of sounds and ideas, new sound sources, new performance techniques and new emotional responses. These discoveries, in part, serve to broaden the child's perspective and drive him to further creative involvement.

The enthusiasm of the child will be sustained if the teacher acknowledges his creative efforts and if the child himself perceives a sufficient degree of personal success. Concerning the first point, it is extremely important for the teacher to remember that the creative effort, regardless of form or size, represents an extension of the most intimate personality of its creator. The teacher must recognize it as such and encourage continued efforts in this direction. Accepting and prizing these efforts serves to develop within the child a positive attitude toward himself as a creative and imaginative person.

Personal success and discovery are vital factors in the creative process. An enthusiastic level of participation cannot be maintained without them. The second condition for sustaining enthusiasm, then, requires that encounters be designed with a sensitivity to the child's capabilities. No encounter dealing with the same framework of operation should ever be repeated exactly. If the child is unsuccessful on the first try, the difficulty probably lies in the design of the encounter. Encounters which result in felt success on the part of the child serve to promote continued interest and participation in musical activities.

Evaluation of the skill objectives in the reinforcement phase can be made by observing the extent to which the child engages in more intensive investigation of performance techniques. How does he proceed in this respect? Are there limitations to his experimentation, i.e., does he have a sufficient variety of sound sources, enough time, space, etc.?

Is the child's musical frame of reference growing? The evaluation of the cognitive objectives in this phase relates directly to this central concern. The following questions will be helpful in assessing the degree to which the child is attaining the cognitive objectives of the reinforcement phase: What other expressive possibilities can the child develop from the sounds and musical ideas acquired in the first four phases? What new relationships of sounds and musical ideas does the child perceive?

The evaluation of objectives in the attitudinal domain relates to those musical experiences which the child finds satisfying as well as those which he finds unsatisfying. What are the characteristics of these musical experiences? How does the child demonstrate his satisfaction or dissatisfaction? Is he maintaining an openness to new musical experiences? Does he look forward to the next musical encounter?

Reinforcement, as described here, must be understood as a vital phase of the creative process in music for the young child. It directs his attention to other musical possibilities which require more intensive investigation. His musical frame of reference is broadened by his own investigations, by the discoveries of others and by listening to live and recorded music representing a broad spectrum of musical periods, styles and practices. And finally, new encounters are designed to intensify and broaden the child's musical insights so that he becomes aware of new exploratory and improvisational possibilities--thus recycling the whole creative process.

The Developmental Phases of Musical Exploration has proven to be a highly productive operational framework for young children. Experience has shown that it represents a natural process of musical involvement and growth. It has assisted teachers in identifying essential and distinguishing characteristics within the creative process in music. Further, it has aided teachers in assessing pupil responses and levels of involvement and in designing encounters to meet expressed needs. The DPME is, therefore, the operational framework of INTERACTION to guide, shape and stimulate continued growth.

PART THREE

CURRICULUM OPERATIONS

The preceding section spoke of the substance and process of INTERACTION. It identified the basic cognitive, skill and attitudinal goals of this program. The DPME was described as the operational framework of INTERACTION and the specific objectives for each phase were delineated. But how does the teacher assist the child in attaining these goals of content and process? What are the structural and procedural guidelines for developing learning experiences which are consistent with the rationale and developmental processes previously stated? In short, how can the teacher design learning experiences which meet the broad cognitive, skill and attitudinal goals of this program?

This section on curriculum operations directs itself to these critical questions. It identifies categories of sound sources, musical ideas, and activities which are appealing and meaningful to young children. Structural plans describe how these areas of interest can be organized to meet the developmental needs of children. Finally, operational guidelines for involving children as composers, performers, and astute listeners are spelled out.

Series

A series is a plan for involving the child in the creative process in music at his level of comprehension, interest and physical development. It consists of a variety of learning experiences which derive their structure from the Developmental Phases of Musical Exploration. As such, a series offers the child an opportunity to participate in creative activities which range from the most basic exploration of sounds and sound materials to the most sophisticated treatment of sound production and organization of which he is capable. His involvement as a composer, performer, conductor, and critical listener in these activities eventually leads to the discovery and appreciation of the musical ideas, behaviors, skills and attitudes identified in each phase of the DPME.

Series Based on Sounds and Sound Sources. Within the operational framework of the DPME, there are many types of series to meet the demand for breadth in variety of experience in this program. Some series focus on a variety of unconventional sound sources and their resultant sounds. Examples in this category are objects of various material construction such as paper, wood, metal, plastic, etc. A comprehensive list of these sound-producing materials can be found in the appendix. Initial exposure to these materials involves the child immediately in the creative process since they require very little dextrous skill. Further, they serve to sensitize the child to a wide range of sounds which serve as the stimulus for further exploration and experimentation.

Other series incorporate the use of instruments fashioned from the materials mentioned in the preceding paragraph.[1] Some of these instruments can be made by the child with little assistance from the teacher. Some examples in this category are wind chimes, flowerpot bells, wooden chimes, sand blocks, etc. Other instruments require the craftsmanship of the teacher such as metal chimes, slide whistles, garden-hose recorders, etc. The making of instruments affords the child opportunities to explore the physical properties of devices that produce sounds. Also, the child derives a great deal of satisfaction from making an instrument which works and is pleasing to him. These factors serve to heighten his interest in sound, its production and organization.

There are series which provide for the use of those conventional musical instruments from which the young child can elicit sounds which are pleasing and satisfying to him. Some examples of string instruments in this category are half-sized violins and cellos, ukuleles, guitars, zithers and autoharps. Representative percussion instruments are xylophones, pianos, bells, tone blocks, bongos, conga drums, snare drums, sand blocks, tambourines, etc. Wind instruments which have been used successfully by children are flutophones, recorders, slide whistles and hose horns. In addition to these common instruments, productive use can be made of the more exotic instruments if they are available. Examples are gongs of various sizes, kalimbas (African thumb pianos), wind chimes of varied material construction, marimbas, etc. The conventional instruments identified in this paragraph present the child with some of the means to realize his most sophisticated musical ideas as well as the need to develop increasing levels of dextrous skills.

Other series call for the use of the voice in both unconventional and conventional ways. The human voice is an extremely complex and versatile sound source. It is capable of producing a vast array of timbres, volumes and pitches. The child knows this instinctively and in an atmosphere of freedom and acceptance, will explore his potential for producing a wide variety of vocal sounds to a considerable degree. The exploration of his vocal mechanism soon begins to assume personal characteristics which lend themselves to higher levels of musical expression in both individual and group improvisations.

In addition to series which focus on a variety of sound sources, there are series which deal with a wide range of musical ideas. Linear and vertical orderings of sounds, sounds representing objects, people, animals, etc., are but a few of the many possibilities in this category. Musical ideas must be treated open-endedly so that the child's organization and performance of these ideas are accepted by the teacher as a manifestation of his developing aural sensitivity and dextrous control.

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[1] Note: Books on instrument-making are listed in the bibliography.

Series Aligned With Other Activities and Subjects. The life of the young child is free, fluid and dynamic--a series of seemingly unrelated episodes. His kaleidoscopic transitions often include the conscious and unconscious production of sounds. He intones and sings quietly to himself as he plays by himself or in the company of others; he imitates the sounds he hears; he experiments with his physical movements and hears the rhythmic patterns sounded by his feet, etc. Sounds, patterns, and organizational schemes, therefore, are not separate from the child's world of play. There is no sharp division in the child's mind between musical and non-musical experience.

For the child, then, a musical experience is not an isolated thing, but is interrelated with his whole living experience. There is a close relationship between his exploration of sound and the development of his physical, intellectual and imaginative faculties. The primary classroom teacher in particular, is in an advantageous position in this regard. Since she is with the child more than any other teacher, she can align musical experiences with other activities in which the child engages throughout the school day. Some series in this category, for example, focus on the exploration of sounds to create functional music (that which celebrates an accasion, serves a physical or sensory-motor need, or satisfies an emotional disposition through expressive meaning, etc.) which relates to immediate concerns of the child.

The alignment of series with other subject areas is another effective way to structure meaningful learning experiences in music. Some series in this category call for the exploration of sounds in creating music for art, literature, drama, dance, etc. Other series emphasize the exploration of sounds to produce music representing people, animals, objects, etc., not found in the immediate environment, but experienced through pictures, books, movies, television and other media.

The Ordering of Series. INTERACTION is designed to accommodate the natural learning styles of the child, his intellectual and emotional perspectives, and his physical development. This curriculum allows the child a wide latitude to pursue goals based on his individual decisions. It guarantees the child personal involvement in what is learned as he explores, progresses, reverts, changes, and experiences the thrill of discovery and achievement.

Series, therefore, are not sequenced in any single fashion for all children. Rather, the child's developing sensitivity to sounds, their production and organization must serve as the guidelines for the sequence of series. The role of the teacher in this process is to perpetuate the child's involvement in musical experiences which satisfy his expressed needs and to keep his curiosity alive by exposing him to new challenges, possibilities, and alternatives.

Encounters

Encounters are the learning experiences contained within a series. Each encounter identifies an objective for the child and procedural recommendations for the teacher. The objective and procedures are consistent with those listed in each of the five phases of the DPME. However, they are stated in the encounter with greater specificity so that a focus and direction are established for pupil activity.

At the beginning stages of operation the child generally needs a wide variety of experiences in exploratory and improvisatory encounters. The number of encounters in the early phases will depend largely on the child's need and readiness to move on. If given sufficient experience, time, latitude and guidance, the child eventually will be motivated by his own curiosity and awakening aesthetic sense. Also, these early explorations of the child assist the teacher in determining the nature and focus of subsequent encounters.

As stated previously, the sequence of encounters as identified in the DPME need not be rigidly adhered to. Depending on the needs of the child, encounters may overlap, progress from guided exploration to free exploration, from exploratory improvisation to guided exploration, etc. Although the progression of encounters as stated in the DPME will be most natural for the child in the majority of series, alternative progressions as suggested by the child's needs must be taken into consideration.

Categories of Encounters. Informal and formal encounters constitute one category. The child's natural curiosity and inclination to play often result in extemporaneous experimentation with sound. These "unplanned" excursions are referred to as informal encounters. The sensitive, resourceful teacher will recognize these episodes as necessary and meaningful to the child and support him in every way possible. Formal encounters, on the other hand, are those which are purposely designed and implemented by the teacher to meet the developmental needs of the child.

Individual and group encounters comprise another category. In the early stages of exploration and improvisation, the child is primarily interested in his own unique discoveries and contributions and is likely to go his own way, obliterating all competition or interference. Some encounters, therefore, should provide for the child's need to become familiar with the materials at hand and to develop skill and confidence at his own rate. At other times the child may discover that he is more productive working in small groups of 3, 4 or 5. The membership of these groups should rotate periodically. If groups are left together for any extended period of time, they tend to become dominated by one child. The teacher must be sensitive to the individual needs of the child and allow for them in the encounters.

Another category of encounters focuses on the use of similar and dissimilar sound sources. Some encounters will involve all children in the simultaneous exploration of a similar sound source. This concentration of creative energy generally results in a greater proliferation of sounds, musical ideas and sound-producing techniques than any one child could discover on his own in the same amount of time. Other encounters will involve the children in the exploration of dissimilar sound sources. These encounters offer the child an opportunity to exercise a choice, which often reflects his needs and interests. In addition, the simultaneous exploration of dissimilar sound sources leads to the discovery of new timbres, new relationships and new expressive possibilities.

Skills are necessary for the realization of the child's musical ideas. Another category of encounters, therefore, provides for the development of the following skills:

1. Dextrous--those used for producing sounds with objects, instruments, voice, and conducting.
2. Translative--those used to work with notation; devised and traditional.
3. Aural--those used to identify pitches, timbres, dynamics, durations, and the recognition tasks associated with the combinations and relationships of these factors.

The possibilities for formulating encounters to stimulate the child's imagination and to perpetuate his involvement in musical activities are limited only by one's knowledge of the child's developmental needs and by one's creative imagination. Examples of other categories of activities for developing encounters are as follows:

1. Exploration of linear orderings of sounds.
2. Exploration of vertical orderings of sounds.
3. Exploration of sounds in the form of sound games.
4. Exploration of sounds in creating music based on musical ideas and styles as perceived in recorded listening examples.
5. Exploration of sound sources to produce imaginary sounds representing objects in the environment.
6. Exploration of sounds to create music for simulating familiar or existing conditions, e.g., weather, natural resources, mechanical operations, etc.

Operational Guidelines for Encounters

The Framework for Operation. The principal purpose of an encounter is to involve the child in the active exploration of sounds. All discoveries, attitudes, and insights relate directly to the quality of the child's personal experience. The nature and design of the encounter and how it is implemented by the teacher, therefore, are most important if it is to be effective. In preparing an encounter, whatever its form, the following should be observed:

1. Learning takes place through the active behavior of the child; it results from what the child does. Therefore, each encounter should strive to engage the child's full creative capacity in an operational manner. This may be accomplished by encouraging the child to explore a variety of sound sources in his own way, by posing stimulating musical problems to solve, by aligning exploration with other areas of school life, by accomodating the child's natural inclination to play, etc.

2. Each encounter should provide for some degree of success for each child. It must be designed so that each child obtains satisfaction from carrying on the kind of behavior implied by the objectives. Each encounter, therefore, must be within the grasp of the child's intellectual, emotional and physical development. It must also be related to the demonstrated interest and direction of exploration of the class. The only valid sequence in this context is the sequence of the child's logic.

3. No encounter dealing with the same framework of operation should ever be repeated exactly. If the child was unsuccessful on the first try, the difficulty probably lies in the design of the encounter. If encounters are designed with a sensitivity to the child's insight, he will usually succeed to some degree. However, no teacher should expect to design encounters that are totally successful for all children all of the time.

4. There are many experiences that can be used to obtain the same educational objectives. Learning styles among young children vary considerably. Therefore, encounters should be diversified; they should not deal with similar ideas, problems, procedures, or solutions.

Performance. The performance is the aural result of the child's intuitive hunch, his educated guess, his notion of what might work. It is the moment when the child presents his musical ideas for personal and group evaluation. As such, performance is an integral part of the child's total music experience and must be given careful consideration. Recommendations for performances are as follows:

1. All children can and should be encouraged to perform. Every child should be involved in the performance of his own music and the works of other children. Performance is part of the total musical process which every child must experience.

2. Performances which require a conductor should be conducted by either the composer or another child. All factors required for an accurate performance should receive careful attention, i.e., starting, cueing, control of volume, speed, stopping, etc.

3. All performances should be taped so that performers may hear the total musical effect. Experience has shown that the performer is seldom aware of much outside of his own part.

Music is meant to be shared with others. It is recommended, therefore, that informal programs of pupils' compositions be presented for other classes in the school and for the parents and friends of the pupils. Brief recitals given for interested pupils during lunch hours or at other times of the school day will not only be of value to the young musician, but will stimulate a new interest in musical participation in many other pupils. Recitals for the community allow pupils to share their enthusiasm with their parents and friends and go far toward establishing a new and vital role for music in the educational program.

Evaluation. Part of every experience is the opportunity for the teacher to influence the discovery of the class without becoming either domineering or authoritarian. This is the principal reason for evaluation in INTERACTION. In evaluation the teacher may suggest factors for the child to critically consider, suggest alternatives and raise provocative questions. Such questions as, "How would you change this?", "What other ways could the sounds be used?", "What worked best?", are most apropos. Nonmusical questions such as, "Did you like it?", "What did that remind you of?", are of considerably less value. Great care should be taken to avoid destructive criticism. It promotes little except a feeling of failure.

In general, discussion should be focused on three types of thinking: analytical, "What did you hear?"; judicial, "Was that factor used appropriately?"; and creative, "What other possibilities are available?". Such directions for thought will assist the child in understanding and challenge him to be aware, sensitive, and resourceful. It will also provide him with a basis for listening which will remain with him long after the school experience is over.

Usually the pupils in class will comment most astutely on the values in a piece. They are seldom negative unless the teacher is. Musical comments which are outside the immediate framework of the encounter should be encouraged. The entire process is intended to develop the child's total frame of reference, not just his insight into the immediate problem.

Discussion of performances may be handled in many ways, including:

1. Discussion after each performance about pertinent musical considerations.

2. A general discussion at the conclusion of all performances dealing with identification of common problems and various solutions.

3. A critical session held after performances by using the tape machine.

One caution must be raised regarding discussion. On some occasions discussions of music have little place. They intrude on an atmosphere created by the music and destroy the aesthetic response to the music itself. The teacher must be sensitive to such situations and remember that verbal explanation is far less important than a personal musical experience.

Listening. There are only two reasons why a child should be expected to listen to music. The first is that a composition is a personal aesthetic resource and the child chooses to hear it for the intrinsic pleasure and meaning it brings. The second is that a piece of music is a practical resource in the accomplishment of a personal task. This does not infer that the teacher should not introduce music of all types which she considers of value. It rather specifies the conditions in which music is likely to be of any significance to the child. The creative teacher who respects the individuality and potentials of the pupils will find many ways to create circumstances in which great musical literature becomes a practical resource. Through such means aesthetic values will emerge on a personal level, and there will be no reason to resort to educational imposition.

One of the great values of this curricular approach is that the child is allowed to use, not merely admire, musical literature. In every encounter the child has a personal reason for understanding music of other composers. In this creative program extensive use is made of a wide variety of recordings. These are used to provide musica[illegible]lues for the child, to assist him to find answers to his own creative problems. Such questions as, "How can I add more variety to my piece?", "How do pieces end?", are often answered far better with examples from the literature than by verbal explanations by the teacher.

Whenever a musical example is needed, more than one musical reference should be used. Each of these should represent different styles and musical periods. Such a practice will open the child's mind by allowing him insight into the relationship of many kinds of music. Music specialists can be particularly helpful in assisting classroom teachers in the collection of appropriate listening examples. Listening to music is a personal experience. The time, the situation, the environment, and the reasons for involvement in listening must all be carefully considered if the music is to have personal meaning.

Learning Environment

The classroom must be organized in ways which allow and motivate intrinsic involvement, personal growth, and musical insight. It must be a learning environment in which creativity is honored, judgment-making is practiced, personal viewpoints are considered; an atmosphere in which the child's musical efforts are encouraged and respected. In this setting, every child should become involved in the total creative process in music: composing, performing, conducting, listening, enjoying, sharing, and reacting as musicians always have. It should be an experience in the real thing on the level of the child's own capabilities.

Physical Conditions. In order to accommodate the child's need to explore and to experiment with the materials of music, certain physical conditions must be considered. The classroom must be a learning laboratory with materials readily available and arranged in such a manner that the objectives at hand can be accomplished. A Sound Materials Center is the most important physical concern in this regard. All of the objects, instruments and materials essential to creative exploration should be contained in this area of the classroom. All cabinets, shelves, or other storage facilities which may constitute part of the Sound Materials Center should be easily accessible to the child. Acoustical problems can be minimized by several economical means. The floor area of the Sound Materials Center should be carpeted. The ceiling and walls surrounding this area should be sound absorbent. This can be accomplished by using acoustical tile where budget allows or by simply using egg cartons.

Activity carrels serve a number of purposes. First of all, they offer a significant reduction in the volume of sound when covered with absorbent materials. Secondly, they are ideal for individual and small group exploration and improvisation. Suitable carrels can be made from plywood or from triwall (three layers of corrugated cardboard). When hinged with heavy masking tape, they can be folded for easy storage.

The Sound Materials Center may also be used as the performance area. The advantage is that the materials needed for performance are within easy reach. Since the physical characteristics of classrooms vary considerably, it may be that another part of the classroom will serve as a more suitable performance center. Experimentation with performances in different areas of the classroom will reveal the most ideal location for most performances. While the purpose for identifying performance areas is to facilitate classroom operations, the teacher must remain sensitive to any unique performance requirements of a particular piece.

A Listening Center should also be included in each classroom. It should contain at least one quality tape recorder and record player with multiple headphones so that a number of children can listen simultaneously. A number of representative tapes and records should be on hand. They will serve to facilitate the objectives of this program.

Psychological Conditions. The creative impulse reveals itself most freely in an atmosphere of mutual acceptance and respect. A good rapport, therefore, must exist between teacher and children and among the children themselves. An air of expectancy must prevail; one in which the child feels he is expected to create. The atmosphere must be free and permissive to the extent that the child feels comfortable exploring, experimenting and manipulating.

The teacher, in this regard, must be as unintrusive as possible, and resist the impulse to inflict her expertise on the child. The teacher serves as a guide, a resource person, a creator of problems, a stimulator for creative thinking. It is not her prerogative to impose judgments but rather to cultivate them. Her function is to stimulate not dominate, to encourage not control, to question far more than to answer. Discovery may be guided but never dictated.

Assessment and Reporting

There is no sharp distinction between musical and non-musical experience in the dynamics of daily living for the young child. He moves through his environment, manipulates it, reacts to it, assimilates it and adjusts to it in varying degrees of consciousness. In this free and fluid state he moves in and out of musical expression quite naturally. He does not conceive of music in this context as an entity separate from his other experiences, but as an integral part of his whole living experience.

The child, when allowed to pursue his own interests, will often move from speech to elements of song and back to speech again. At times natural movement becomes deliberate and patterned, it merges with rhythmic sound and returns to movement again. Musical instruments are played and abandoned without any apparent change in the nature of the activities or overall pattern of purpose and direction. What may appear to the adult as a kaleidoscopic series of unrelated episodes is to the child a natural mode of inquiry and expression.

Music, then, plays a unique role in the developmental process of the young child. It serves as a vehicle through which he objectifies his daily experiences, develops aural discrimination and perception, develops a deeper sense of self awareness, and establishes rapport between himself and others. As such, music is a necessary part of the educational program for all children.

The encounters in INTERACTION are aligned with the total spectrum of the child's daily activities, subjects and interests. This serves to facilitate the child's involvement in meaningful learning experiences. It enhances musical investigation, exploration and inquiry by making sound sources and related materials readily available in an atmosphere of acceptance and respect. Finally, it broadens and deepens the child's interest and knowledge of music by providing him with opportunities which identify new creative possibilities and alternatives.

The implications of the foregoing for assessing and reporting the musical development and progress of the young child demand careful consideration. First of all, since music is interrelated with the child's total living experience, a pass/fail policy has no relevance here. There is a way to engage the attention, interest, and creative participation of every normal child. The teacher must find a way to involve each child in this creative process. Secondly, it makes little sense to develop a method of creative inquiry in an atmosphere of acceptance and then place it into a system of evaluation which reverses it. Considerable uncertainty is present in the creative act when the child faces the unknown and he will be more secure if his creative efforts are supported by the psychological security of a non-threatening learning environment. Finally, music for the child is a personal matter--a way of knowing, feeling, behaving, and developing. Viewed in this light, creative involvement in the process of music is an outward manifestation of the child's very being. It must be honored and nurtured by all concerned.

INTERACTION is child-oriented and stresses that each child must be allowed to develop at his own rate. It deals with process and a method of working, rather than putting the emphasis on the results of process. Therefore, it should be non-graded.

An alternative to the pass/fail method is a descriptive report of the child's progress. The descriptive report should identify the child's personal mode of musical involvement, inquiry, and interaction. His attitude, effort and behavior should also be included. In short, the descriptive report should give as clear and complete a picture of the child's progress in music as possible. The questions listed in the evaluation section of each phase of the DPME in Part IV of INTERACTION can serve as a useful guide in structuring this report.

One caution must be raised regarding assessment. The nature of creativity is such that periods of intensive involvement and productivity are often preceded by periods of little activity. With this in mind, then, descriptive reporting should reflect long-term assessment of the child's musical growth.

PART FOUR

OPERATIONAL PLANS

This section contains operational plans for involving children in the Developmental Phases of Musical Exploration. Included are sample series, principal ideas, objectives for pupils, procedures for teachers, and evaluative criteria. The sample series is designed to involve children in the various phases of the DPME through the exploration of sound sources of paper construction. Similar series for beginning stages could be drawn from any of the other sound sources listed in the appendix.

The principal ideas identified in this process plan are points of reference which serve as a basis for action in a variety of circumstances. Also, they serve as guidelines for teachers in designing series appropriate to the intellectual, emotional and physical development of young children. The usual sequence of events in learning is from experience to perception to abstraction. Therefore, children are expected to progress through the various phases of the creative process in music many times before they discover and comprehend the nature and meaning of these principal ideas.

PRINCIPAL IDEAS SERVE AS THE CONCEPTUAL FRAMEWORK OF EACH PHASE OF THE DPME. REFER TO THEM AS YOU DESIGN SERIES AND GUIDE CHILDREN THROUGH EACH ENCOUNTER.

Teachers of children in nursery school, kindergarten and possibly first grade, may find that it will be some weeks, perhaps months, before your children are ready for phases three and beyond. REMEMBER, many children prefer to explore on their own in the early stages--to gain a clearer understanding and better control of sound sources before combining sounds into expressive entities and interacting effectively with their peers.

DO NOT FEEL ANY COMPULSION TO PROGRESS TO ADVANCED PHASES BEFORE CHILDREN ARE READY FOR THESE EXPERIENCES.

Objectives for pupils are creative acts which pupils perform to enable them to act, think and feel within a broad musical framework. These objectives cover the full spectrum of skill, cognitive and attitudinal concerns. They are not to be viewed as separate and discrete areas, but rather as closely related and interchangeable categories of creative acts which contribute to an ever-increasing operational frame of reference.

THE OBJECTIVES OF EACH ENCOUNTER MUST BE DESIGNED TO INVOLVE CHILDREN IN CREATIVE ACTS WHICH ENHANCE THEIR ABILITIES TO ACT, THINK AND FEEL WITHIN A MUSICAL FRAMEWORK.

Procedures for teachers are actions which teachers perform to perpetuate pupil involvement in a wide variety of operational objectives. these actions range from providing the necessary physical conditions for exploration to providing the optimum psychological, intellectual, social and emotional conditions for creative insight. Many practical recommendations are mentioned in the process plan. Sensitivity on the part of the teacher to the needs of pupils will suggest alternative procedures.

REMAIN SENSITIVE TO THE DEVELOPMENTAL NEEDS OF CHILDREN AND PROVIDE ALL NECESSARY MEANS OF SUPPORT AND ENCOURAGEMENT.

Evaluation is inherent in all phases of the creative process and is included, therefore, as an integral part of each phase. Its purpose is to assist the teacher and pupils in determining to what extent the series have resulted in improved skills, greater musical insights and positive aesthetic attitudes. Sample questions are given which focus attention on specific aspects of the creative process. Finally, the evaluative criteria offer suggestions for enhancing and extending the series for future musical involvement.

EVALUATION FOCUSES ON CHILDREN, THEIR DEVELOPING INSIGHTS, FEELINGS AND LEVEL OF CREATIVE INVOLVEMENT. AS SUCH, IT IS AN INTEGRAL PART OF EACH PHASE OF THE CREATIVE PROCESS.

A SAMPLE SERIES

PHASE I - FREE EXPLORATION

OBJECTIVE: To acquaint pupils with paper materials as sound sources by engaging them in a number of paper games.

Game #1 - Passing the paper ball.

PROCEDURE:
1. Each pupil participating will stand in a circle (two large circles or several small circles may be used) holding a sheet of paper identical or similar in quality. The paper is held with two hands, each one at opposite edges, to provide maximum room for an object to be caught and tossed with the paper.

2. A ball of paper will be passed clock-wise from one pupil to the next within the circle. Each pupil should attempt to catch the ball with his paper tray, as well as serve it, without handling the ball directly with his hands.

3. The purpose of the game is to pass the paper ball around the complete circle without letting it drop to the floor. If the ball drops, the game begins all over again with the next pupil located in the circle.

Game #2 - Passing the paper ball.

PROCEDURE:
1. Same as above.

2. In addition to the above in Game #1 each pupil should try to pass the ball on as quickly as possible. With the use of a stop-watch, alarm clock, range-timer, etc. time limitations can be set. Each pupil should participate at one time or another in setting up the time limitations for the game.

3. In additon to number three in Game #1 special note should be taken of the amount of time a given game consumes. When this is established shorter time limitations can be set up as game goals.

Game #3 - Making different sounds with the paper ball.

PROCEDURE:
1. Same as above.
2. In addition to the above in game #1 each pupil should attempt to make a different sound with the paper ball than that sound which precedes his in the circle. Some of the ways different sounds can be achieved are: bouncing the paper ball on the paper tray, letting the paper ball slide across the paper tray, shaking the paper tray to rattle the paper ball, etc. (Two pupil

judges may be selected to determine whether or not a sound is significantly different for the game to proceed to the next pupil in the circle.)

3. Same as above.

Note: Basic raw material such as sheets of blank paper, cardboard strips, cardboard cylinders, straws, milk containers, etc. do not always stimulate imaginative use. The games are designed to motivate pupils to the production of paper sounds by allowing them to work with paper in ways they may not have considered. In some cases the progression to a game with new criteria added may only be appropriate after a single game has been played a few times.

Variations of the Paper Game.

1. Use other paper objects in place of the paper ball, e.g., ice cream cup container, paper water cup, straw(s), etc.
2. The quality of paper held by each pupil in the circle can differ.
3. Volunteer pupils can count the number of different sounds produced by a group playing the game.
4. Time limits can be determined by the extent to which pupils can keep the paper ball off the floor. Volunteer pupils can count the number of different sounds produced in the time span.

A SAMPLE SERIES

PHASE I - FREE EXPLORATION

OBJECTIVE: To explore a wide variety of sounds using paper identical or similar in quality.

PROCEDURE:

1. Distribute sheets of paper identical or similar in quality to each pupil or allow each pupil to select his own from a place predetermined by the teacher.

2. Each pupil should be given an appropriate amount of time to find different sounds with his paper.

3. Invite pupils to perform two or three of their sounds for the class or a small group. Continue listening to their sounds until original ideas are exhausted and every volunteer has performed.

4. Record the sounds volunteered by the pupils.

5. Play back the tape and listen to the sounds.

6. If discussion is appropriate, focus attention with the following questions.

    6a. How was the sound different from the last sound? the next sound?

    6b. Were any sounds alike? If so, how were they alike?

A SAMPLE SERIES

PHASE I - FREE EXPLORATION

OBJECTIVE: To explore a wide variety of sounds using paper of differing qualities.

PROCEDURE:

1. Put several pieces of paper (at least enough to provide for each participating pupil) of differing qualities or textures, e.g., construction paper, wax paper, tissue paper, newspaper, light-weight cardboard, brown bag paper, etc., into a cardboard box.

2. Invite each pupil to select a sample from the box, preferably without looking as he makes his choice.

3. Allow an appropriate amount of time for each pupil to produce a number of sounds with his paper.

4. Tape the sounds volunteered for performance by each pupil.

5. If discussion is appropriate, focus attention with the following questions.

   5a. What kind of paper was used to make the sound?

   5b. How was the sound made?

   5c. How would you describe the sound?

PHASE I - FREE EXPLORATION

PRINCIPAL IDEAS

Sounds can be made from many different sources (objects, voice, conventional instruments, electronic devices, etc.).

There are many ways to make sounds.

There are many sounds.

All sounds are different; sometimes the differences are big, sometimes little.

Every object found in the environment can be used to produce sounds.

Sounds can be identified by the techniques employed to produce them.

Sounds can be identified in ways which relate to personal experiences.

Sounds can be identified by describing their characteristics, e.g., lively, short, delicate, shrill, staccato, etc.

Sounds can be fascinating and fun to make.

It can be satisfying to share discoveries of new sounds and techniques for producing sounds with others.

PHASE I - FREE EXPLORATION

OBJECTIVES FOR PUPILS

SKILL OBJECTIVES

To explore a wide variety of sound sources to discover a wide variety of sounds.

To explore a wide variety of ways of producing sounds on the sound sources provided.

COGNITIVE OBJECTIVES

To develop awareness of a great variety of sounds by identifying sounds in their auditory environment and sounds deliberately produced by themselves and others.

To perceive the differences and similarities in sounds and to identify them operationally, in ways which relate to personal experiences, and by describing their physical characteristics.

To identify a wide variety of sound sources in their environment.

ATTITUDINAL OBJECTIVES

To engage freely in exploratory activities initiated by self and teacher.

To share discoveries of new sounds and sound-producing techniques with the class.

To develop an openness to experience so that they maintain an excitement for discovery.

PHASE I - FREE EXPLORATION

PROCEDURES FOR TEACHERS

SKILL OBJECTIVES

Arrange the classroom as a learning laboratory with appropriate materials and equipment.

Involve pupils in sound-producing activities which are meaningful to them.

Establish an atmosphere of acceptance so that pupils are encouraged to engage freely and repeatedly in the exploration of sound sources.

Encourage pupils to evaluate outcomes after the exploratory period.

COGNITIVE OBJECTIVES

Encourage pupils to make their own observations, perceptions, and interpretations of sounds in their environment and sounds deliberately produced by themselves and others.

Encourage pupils to identify their perceptions of the differences and similarities in sounds operationally, in ways which relate to personal experiences, and by describing their physical characteristics.

Encourage pupils to identify a wide variety of sounds in their environment with which they can create.

ATTITUDINAL OBJECTIVES

Establish an air of expectancy; one which allows for mistakes, i.e., "creative fallout"--which can serve as the basis for further exploration.

Cultivate a climate in which sound social and emotional conditions prevail in a comfortable relationship among pupils.

Develop within pupils an openness to experiences.

Exhibit your own excitement about discoveries made by pupils.

PHASE I - FREE EXPLORATION

EVALUATION

SKILL OBJECTIVES

To what extent did pupils discover a wide variety of sounds on the sound sources provided?

> What available sound-producing materials were used?
>
> Was the supply of sound sources sufficient to involve all pupils?

To what extent did pupils discover a wide variety of ways of producing sounds on the sound sources provided?

> How were the sounds produced?
>
> Were the sound sources within the technical grasp of the pupils?

Could this phase of the creative process have been enhanced in this educational encounter?

> Would a different placement or arrangement of the sound-producing materials provide a stimulus for further exploration, e.g., putting all materials in a large box for pupils to select, changing the location of the sound materials in the room?
>
> Would it be possible for free exploration of sound-producing materials to grow out of some other activity in the day?
>
> Could a game be devised to accomplish similar exploratory activities?

COGNITIVE OBJECTIVES

Did pupils exhibit an awareness of a great variety of sounds in their auditory environment and sounds deliberately produced by themselves and others?

> How was this awareness exhibited?

To what extent did pupils perceive the differences and similarities in sounds?

> How were the differences and similarities perceived:

by the operational techniques involved?

by relating to their personal experiences?

by their physical characteristics?

Were the differences and similarities perceived in ways other than those listed above?

To what extent did pupils identify a wide variety of sound sources in their environment?

Which sound sources were most easily identified?

Which sound sources were not easily identified?

Could this phase of the creative process have been enhanced in this educational encounter?

Do pupils have time to listen and observe each other when they are ready to do so?

Is more exploration of the sound sources required to achieve the cognitive objectives identified for this phase?

Could pupils' ideas be utilized in planning the next encounter?

ATTITUDINAL OBJECTIVES

To what extent did pupils engage freely in exploratory experiences initiated by themselves or the teacher?

Can you identify the reasons for any participation which was less than optimum?

To what extent did pupils share discoveries with the class when it seemed appropriate?

Were there some pupils who chose not to share their discoveries with the class? If so, why?

To what extent did pupils exhibit an openness to the experiences?

How was this openness demonstrated?

Could this phase of the creative process have been enhanced in this educational encounter?

Would another time of day affect pupils' creative endeavors?

Would more relaxed controls in the room result in greater spontaneity and interaction?

Did the teacher exhibit any excitement about pupils' discoveries?

A SAMPLE SERIES

PHASE II - GUIDED EXPLORATION

OBJECTIVE: To focus on a wide variety of sounds and sound-producing techniques using paper of identical or similar quality.

PROCEDURE:

1. Distribute paper of identical or similar quality to each pupil, or allow each pupil to select his own from a place predetermined by the teacher.

2. Using the sound effects record or a similar recorded reference, play the sound of an airplane propellor.

3. Invite pupils to try and imitate the sound with paper.

4. Following an appropriate amount of time for exploration listen to the various sounds played in imitation of the airplane propellor.

5. Invite pupils to perform other unique sounds for members of the class or group to imitate.

6. Discuss similarities and differences of the sounds imitated.

   6a. Were the sounds alike?

   6b. Were the sounds different? If so, what could we do to make them sound alike?

Note: For variations in the above encounter the following may be observed in developing future encounters.

1. Ask pupils to close their eyes while an individual makes a single sound for imitation by other members of the group or class.

2. Use the above encounter with paper of differing quality and texture.

3. Select an environmental sound, e.g., the tick of the clock, the snapping of a ball point pen, the tapping of a pencil on a desk, the squeaking of a chair, the sliding of shoes against the floor, etc., for pupils to imitate with paper of differing or identical quality.

4. Select another reference from a sound effects record.

5. Using paper materials pupils can perform imaginary sounds, e.g., the sound of pulling a marshmallow apart, the sound of a bubble bursting, the sound of eye lashes fluttering, the sound of a finger bending, the sound of fish swimming, etc.

6. Focus on producing sounds by concentrating on materials in a specific way, e.g., the edge of the paper, a roll of paper, a crumpled paper, etc.

PHASE II - GUIDED EXPLORATION

PRINCIPAL IDEAS

Sound sources can be altered physically to produce different sounds.

New sounds and sound-producing techniques can be suggested by extra-musical referents, e.g., pictures, words, films, etc.

New sounds and sound-producing techniques can be suggested by aural referents, e.g., tape loops, motives, ostinati, environmental sounds, etc.

A sound may initiate impressions which are not commonly identified with that sound.

Sounds can be classified according to acoustical parameters, i.e., timbre, volume, duration and pitch.

Sounds that other people make can be interesting and satisfying to listen to.

PHASE II - GUIDED EXPLORATION

OBJECTIVES FOR PUPILS

SKILL OBJECTIVES

To explore a given sound source for additional sounds and sound-producing techniques.

To explore a given sound source with a focus on qualitative factors.

COGNITIVE OBJECTIVES

To identify impressions initiated by newly-discovered sounds.

To classify sounds according to their acoustical parameters, i.e., timbre, volume, duration and pitch.

ATTITUDINAL OBJECTIVES

To listen and react to aural and other sensory stimuli offered by the teacher and other pupils.

To perceive the uniqueness of other people and the world around them.

PHASE II - GUIDED EXPLORATION

PROCEDURES FOR TEACHERS

SKILL OBJECTIVES

Focus pupils' attention on other exploratory possibilities with words, questions, pictures, musical stimuli, etc.

Focus pupils" attention on qualitative factors of sound by extending or suggesting a particular sound-producing technique on a given sound source.

COGNITIVE OBJECTIVES

Encourage pupils to identify impressions initiated by newly-discovered sounds.

Encourage pupils to identify, classify and qualify new musical discoveries.

Assist pupils in acquiring a wide range of aural information and experiences through strategies which appeal to pupils' natural sense of play, inquiry, and discovery.

ATTITUDINAL OBJECTIVES

Encourage pupils to listen and react to aural and other sensory stimuli offered by the teacher and each other.

Encourage pupils to "experience" each others' discoveries as more than sounds--as unique, personal, creative offerings.

PHASE II - GUIDED EXPLORATION

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SKILL OBJECTIVES

To what extent did pupils explore a given sound source for additional sounds and sound-producing techniques?

How were the additional sounds produced?

To what extent did pupils explore a given sound source with a focus on qualitative factors?

On which qualitative factors did the pupils focus?

Can the pupils find other ways to make a given sound?

Can the pupils find other ways to make a sound softer? louder?

Could this phase of the creative process have been enhanced in this educational encounter?

Would the use of a tape recorder intensify pupil exploration?

Would a limitation of the number and variety of sound-producing materials provided at a given time or day allow pupils to focus more intensely on qualitative factors?

COGNITIVE OBJECTIVES

To what extent did pupils identify impressions initiated by newly-discovered sounds?

What were the impressions identified by pupils?

Why did the new sounds make them think of these impressions?

To what extent did pupils classify sounds according to acoustical parameters, e.g., pitch, volume, duration (length of sound), timbre (quality of sound)?

How did they describe the sounds?

Could this phase of the creative process have been enhanced in this educational encounter?

Would the use of the tape recorder assist pupils in identifying similarities and differences among sounds?

Could the impressions identified by pupils be used as ideas for other strategies?

ATTITUDINAL OBJECTIVES

To what extent did pupils listen and react to aural and other sensory stimuli offered by the teacher and other pupils?

How did pupils react to sounds made by others?

Were the pupils genuinely interested in the sounds made by others?

To what extent did pupils perceive the uniqueness of other people and the world around them?

How did pupils evidence their perception of this uniqueness?

Could this phase of the creative process have been enhanced in this educational encounter?

Were reactions to shared discoveries directed to the nature of the sounds and not interpreted by the pupils as personal criticism?

Would specific groupings of pupils affect their productivity?

Does the teacher explore the sound sources along with the children, thus exhibiting her own enthusiasm?

A SAMPLE SERIES

PHASE III - EXPLORATORY IMPROVISATION

OBJECTIVE: To explore possibilities for musical ideas by exploring extended uses of sounds.

PROCEDURE:

1. Using similar or different paper materials, pupils can express the following activities in sound.
    a. a mouse running across the room.
    b. two mice running across the room.
    c. several mice running across the room.
    d. walking through dry leaves.
    e. walking through wet leaves.
    f. a horse galloping.
    g. water dripping from a faucet.
2. In addition to the above use any suggestions pupils have made in this encounter or in former encounters.
3. Select several extended sounds from the sound effects records listed in the appendix for pupils to simulate with paper materials, e.g., a jet plane departing, a train arriving, an automobile in traffic, etc.
4. Allow an appropriate amount of time for pupil exploration.
5. Record the efforts performed by the pupils for listening and identification.
6. After listening to the tape discussion can be focused with the following questions.
    6a. How are the paper sounds of this jet plane different from the last one we heard on tape? the next one we will hear on tape?
    6b. Why do you think there is a difference?
    6c. Do the paper sounds tell us the plane is leaving the airport? If so, how do we know?

6d. How would it sound if the plane was flying into the airport?

6e. What is the difference between the sounds of a plane flying away from the airport and the sounds of a plane flying into the airport?

7. The following may serve to stimulate further exploration with extended sounds. What would happen if:

   a. the plane suddenly crashed?

   b. the pilot forgot his lunch and decided to turn around and come back?

   c. the plane had a flat tire?

8. Allow an appropriate amount of time for exploration of ideas before taping and listening.

Note: The above may represent several encounters for many classes.

PHASE III - EXPLORATORY IMPROVISATION

PRINCIPAL IDEAS

Sounds and musical ideas which originate with a child can be repeated by him or imitated by others by applying the same performance techniques.

Greater technical development is necessary to repeat or imitate sounds and musical ideas.

The expressive implications of a sound may vary considerably when it is preceded or followed by other sounds.

The nature of a sound may change considerably when sounded simultaneously with other sounds.

Musical ideas can be adapted to one's own manner of sound organization.

Musical ideas can be classified according to their unique characteristics.

Other people have musical ideas too and it is interesting to hear their ideas and experiment with them in many ways.

PHASE III - EXPLORATORY IMPROVISATION

OBJECTIVES FOR PUPILS

SKILL OBJECTIVES

To repeat their own musical ideas and to imitate the sounds and musical ideas generated by others.

To develop greater technical control for repetition and imitation of sounds and musical ideas.

COGNITIVE OBJECTIVES

To organize sounds into a variety of schemes.

To adapt musical ideas to their own manner of sound organization.

To identify musical ideas according to their unique characteristics.

ATTITUDINAL OBJECTIVES

To become increasingly aware and sensitive to musical sounds and ideas of others by developing an enthusiasm for what they hear and by experimenting with their ideas.

To exhibit sensitivity to the creative efforts and products of others.

PHASE III - EXPLORATORY IMPROVISATION

PROCEDURES FOR TEACHERS

SKILL OBJECTIVES

Encourage pupils to repeat sounds and musical ideas which appeal to them by applying the same performance techniques.

Pose appropriate problems, questions, etc., which will assist pupils in developing greater technical facility.

COGNITIVE OBJECTIVES

Encourage pupils to explore freely the relationships among their musical ideas and feelings.

Encourage pupils to listen carefully to each other for musical ideas which seem appropriate for their expressive purpose.

Encourage pupils to identify the unique characteristics of musical ideas in their own terms.

ATTITUDINAL OBJECTIVES

Encourage pupils to empathize with each others' musical ideas by relating to them in ways which are personally meaningful.

Encourage pupils to express their personal reactions, impressions, feelings, etc., to a musical experience.

PHASE III - EXPLORATORY IMPROVISATION

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SKILL OBJECTIVES

To what extent did pupils repeat original musical ideas?

Were the repetitions successful? Why?

What was the nature of the repeated musical ideas?

Did pupils realize they were successful?

Were there any difficulties encountered in repeating musical ideas?

To what extent did pupils imitate musical sounds and ideas generated by others?

Were the imitations successful? Why?

What was the nature of the imitated musical ideas?

Did the pupils realize they were successful?

Were there any difficulties encountered in imitating musical ideas?

To what extent did pupils develop greater technical control of the sound sources?

How did pupils exhibit greater technical control?

Were any new techniques discovered in the process of imitating or repeating musical ideas?

Could this phase of the creative process have been enhanced in this educational encounter?

Were there specific kinds of musical ideas which appeared to be more meaningful than others to the pupils?

Which success factors could be carried over and developed in other strategies?

COGNITIVE OBJECTIVES

To what extent did pupils organize sounds into a variety of schemes?

How did pupils organize their sounds?

To what extent did pupils adapt musical ideas to their own manner of sound organization?

How did pupils adapt musical ideas to their own manner of sound organization?

To what extent did pupils identify musical ideas according to their unique characteristics?

Which characteristics were identified by pupils?

Could this phase of the creative process have been enhanced in this educational encounter?

Were the necessary conditions for performance and perception provided, i.e., space, time, absence of extraneous noise, etc.?

Can the ideas expressed by the pupils be utilized in shaping another encounter?

ATTITUDINAL OBJECTIVES

To what extent did pupils become increasingly aware and sensitive to the musical sounds and ideas of others?

How did pupils exhibit sensitivity to musical sounds and ideas?

Could this phase of the creative process have been enhanced in this educational encounter?

Were pupils given sufficient time and latitude to express their personal reactions, impressions, feelings, etc., to the improvisations?

Were their reactions honored?

A SAMPLE SERIES

PHASE IV - PLANNED IMPROVISATION

OBJECTIVE: To develop musical thoughts using paper materials.

PROCEDURE:

1. Encourage pupils to make the most expressive use of the sounds and musical ideas which have been accumulated. Pupils can be requested to plan an improvisation or tell a sound story using paper materials made available by them or the teacher.

2. The topic or title may be chosen by the pupils or some of the following suggestions can be made by the teacher:

   a. My Jet Plane.
   b. The Mouse That Got Caught.
   c. Leaves in a Windstorm.
   d. The Fastest Train in Town.
   e. The Leaky Faucet.
   f. The Circus Horse.

3. When individuals and groups of pupils have completed their sound stories, the following format may be used for recording.

   a. Record the name(s) of the pupil (s).
   b. Record the title of the sound story.
   c. record the sound story or improvisation.

4. Play back the sound stories for listening pleasure and discussion.

5. Some of the following questions may be used to focus or start a discussion.

   5a. What did you like best about this sound story?

   5b. Would you like to listen to it again sometime? Why?

   5c. Was the second story different from the first story? If so, how was it different?

   5d. Which paper sounds did you enjoy hearing the most? Why?

PHASE IV - PLANNED IMPROVISATION

PRINCIPAL IDEAS

Technical skills must be refined so that complex musical ideas are performed to one's satisfaction.

Musical ideas can be considered and tested in a number of ways to achieve the ultimate in satisfactory performance.

A variety of sounds may be arranged in such a way that they are expressive and meaningful.

In a musical composition sounds are varied in many different ways.

The ways in which sounds are varied contribute to the expressiveness and the meaning of the composition.

Musical ideas heard in a composition can be used in other ways or they can suggest possibilities for different compositions.

A musically creative child is one who can manipulate and organize the materials of music in ways that are satisfying and meaningful to him.

Sounds put together may have meaning in relationship to ideas, incidents, or broad feelings which are not common to any of the sounds. Many times these implied responses cannot be easily described but are felt inside.

PHASE IV - PLANNED IMPROVISATION

OBJECTIVES FOR PUPILS

SKILL OBJECTIVES

To refine technical skills so that their musical ideas are performed to their satisfaction.

To consider and test their musical ideas in a variety of ways to achieve the ultimate in satisfactory performance.

COGNITIVE OBJECTIVES

To organize their sounds and musical ideas in expressive and meaningful ways.

To identify the ways in which sounds are arranged in the planned improvisation.

To determine whether the arrangements of sounds are used appropriately in the planned improvisation.

To determine how the musical ideas heard in the planned improvisation can be used in other ways or how they can suggest possibilities for other improvisations.

ATTITUDINAL OBJECTIVES

To see themselves as creative persons.

To respond to the planned improvisations in ways which reflect a deeper sense of subjective awareness.

PHASE IV - PLANNED IMPROVISATION

PROCEDURES FOR TEACHERS

SKILL OBJECTIVES

Assist pupils in refining their technical skills by providing necessary motivation and support, e.g., skill stations, skill loops, etc.

Encourage pupils to consider and test their musical ideas in a number of ways.

COGNITIVE OBJECTIVES

Assure pupils that they have aural logic--a musical sense--and encourage them to organize their musical ideas in ways that are expressive and meaningful to them.

Encourage pupils to make their own observations, interpretations, and conclusions regarding musical ideas used in a particular composition.

Encourage pupils to cultivate their own judgments regarding the manner in which musical ideas are used in a particular composition.

Encourage pupils to consider other possibilities suggested by the musical ideas used in a particular composition.

ATTITUDINAL OBJECTIVES

Guide pupils to the realization that music allows them to experience themselves doing and expressing something of which they may have felt incapable.

Explore with pupils the phenomenon of expressing the unexpressible through music.

PHASE IV - PLANNED IMPROVISATION

EVALUATION

SKILL OBJECTIVES

To what extent did pupils refine their technical skills so that their musical ideas were performed to their satisfaction?

How did pupils refine their technical skills?

To what extent did pupils consider and test their musical ideas in a variety of ways?

In what ways did pupils consider and test their musical ideas?

Could this phase of the creative process have been enhanced in this educational encounter?

Has the tape recorder been used to capture the variety of ways in which pupils test and consider their musical ideas?

COGNITIVE OBJECTIVES

To what extent did pupils organize their musical ideas in expressive and meaningful ways?

How did pupils organize their musical ideas?

To what extent did pupils identify the ways in which sounds were arranged in the planned improvisation?

Which arrangements of sounds did pupils identify?

To what extent did pupils determine whether the arrangements of sounds were used appropriately in the planned improvisations?

Which arrangements of sounds did pupils identify as appropriate and inappropriate?

To what extent did pupils determine how the musical ideas heard in the planned improvisations could be used in other ways?

What new uses of musical ideas did pupils identify?

Could this phase of the creative process have been enhanced in this educational encounter?

Do pupils require more experience in exploratory improvisation?

Are there certain arrangements of sounds which pupils are unable to identify? If so, do these subleties suggest new strategies?

ATTITUDINAL OBJECTIVES

To what extent did pupils see themselves as creative persons?

How did pupils evidence an awareness of themselves as creative persons?

To what extent did pupils respond to the planned improvisation in ways which reflected a deeper sense of subjective awareness?

How did the pupils evidence a deeper sense of subjective awareness?

Could this phase of the creative process have been enhanced in this educational encounter?

If groupings have been established, what effect would a change in the organization of membership have on the improvisation?

Did the experiences provide some degree of success for all pupils?

If so, was this success felt by the pupils?

A SAMPLE SERIES

PHASE V - REINFORCEMENT

OBJECTIVE: To develop other expressive possibilities with the basic musical ideas acquired with the use of paper materials.

PROCEDURE: 1. Encourage more extensive use of paper materials by inviting pupils to plan another improvisation (sound story) or identify other musical uses for paper materials. The following may be considered to serve as a stimulus in extending ideas contained in the planned improvisation.

1a. How would your music change if all the sounds from beginning to end were very short? long?

1b. What would happen to your story if you played your music faster? slower?

1c. How would your music change if some of the sounds were loud and some of the sounds not louder than a whisper?

1d. How would your music change if some of the sounds got louder a little bit at a time?

Note: Each of the above suggestions may develop into separate encounters if pupils proceed with experimentation following a given question. Encourage pupils to answer each question with sounds, e.g., paper, rather than verbalization.

2. Pupils can experiment with the above ideas and compare the results to the original planned improvisations. Revisions and explorations of musical ideas may go on as long as they are productive from the pupils' point of view.

3. Record and play back pupil efforts as long as it appears to enhance their awareness of musical factors, general progress, and listening pleasure.

PHASE V - REINFORCEMENT

PRINCIPAL IDEAS

Performance techniques can be used in many different ways.

Basic musical ideas acquired through exploration and improvisation can be expressed in many different ways.

Recorded music representing a broad spectrum of music periods can extend a child's frame of reference.

The ultimate achievement of musicality is the awakening of an aesthetic sense, the ability to comprehend beauty and to find meaning on a plane beyond analysis of mechanics, techniques, or even concepts.

PHASE V - REINFORCEMENT

OBJECTIVES FOR PUPILS

SKILL OBJECTIVES

To engage in more intensive investigation of performance techniques.

COGNITIVE OBJECTIVES

To develop other expressive possibilities with the basic musical ideas acquired through the first four phases.

To extend their musical frames of reference by listening to recordings of music representing a broad spectrum of music periods, styles, and practices.

ATTITUDINAL OBJECTIVES

To identify new musical factors which are satisfying to them, as well as those which are not.

To find meaning on a plane beyond analysis of mechanics, techniques, or even concepts.

PHASE V - REINFORCEMENT

PROCEDURES FOR TEACHERS

SKILL OBJECTIVES

Place the emphasis upon "doing" and little upon "knowing"--except as knowing comes about by doing.

Assist and guide pupils in discovering other ways to produce sounds and musical ideas on a given sound source.

COGNITIVE OBJECTIVES

Encourage pupils to reorganize their basic musical ideas acquired through exploration and improvisation in other ways that are personally expressive and meaningful. Focus discussion on new relationships, associations, structural attributes, etc.

Encourage pupils to listen to a wide variety of records to acquaint them with their musical heritage and to extend their creative frame of reference.

ATTITUDINAL OBJECTIVES

Encourage pupils to remain open to new musical experiences by providing many opportunities to exercise analytical, judicial, and creative behavior.

Guide pupils to the discovery of meaning on a plane beyond analysis of mechanics, techniques, and concepts.

PHASE V - REINFORCEMENT

EVALUATION

SKILL OBJECTIVES

To what extent did pupils engage in more intensive investigations of performance techniques?

> How did pupils investigate performance techniques more intensively?

Could this phase of the creative process have been enhanced in this educational encounter?

> What considerations in musical performances would be made if planned improvisations were conducted elsewhere, e.g., another room, outside, in the auditorium or gymnasium?

COGNITIVE OBJECTIVES

To what extent did pupils develop other expressive possibilities with the basic musical ideas acquired through the first four phases?

> What other expressive possibilities were developed by pupils?

To what extent were pupils' frames of reference extended by listening to recordings of music representing a broad spectrum of music periods, styles, and practices?

> How were the pupils' frames of reference extended?

Could this phase of the creative process have been enhanced in this educational encounter?

> Do the differences in environmental factors suggest other exploratory possibilities?

ATTITUDINAL OBJECTIVES

To what extent did pupils identify new musical factors which were satisfying to them, as well as those which were not?

> What new musical factors were identified by pupils as satisfying?

To what extent did pupils find meaning on a plane beyond analysis of mechanics, techniques, or even concepts?

Could this phase of the creative process have been enhanced in this educational encounter?

How would the pupils react if they were invited to perform in places other than those established in routine?

ALTERNATIVE SERIES I

METAL ENCOUNTER

PHASE I - FREE EXPLORATION

OBJECTIVE: To explore a wide variety of sounds using metal sound sources.

PROCEDURE:

1. Place a variety of metal objects,[1] e.g., old kitchen utensils, large nails, horseshoes, pipes of varying sizes and lengths, metal bars, steel eggcups, keys on a key ring, pans, pan-lids, tea trays, empty coffee cans, etc. in a place designated as the sound materials center.

2. Encourage pupils to explore the objects for sounds. This can be done on an individual basis during the course of the school day, or pupils may select metal objects and share sounds in groups.

3. When discussion is appropriate the following questions may serve as a guide:

   3a. Were any sounds alike? If so, how were they alike?

   3b. Were any sounds different? If so, how were they different?

   Pupils will perceive the differences and similarities in sounds in many different ways, e.g., by the physical techniques involved in performing them, by relating them to their personal experiences, by identifying acoustical characteristics, i.e., timbre (quality of sound), pitch (highness or lowness of the sound), duration (length of the sound), and volume (loudness of the sound), and in other ways which are meaningful to them.

4. Invite pupils to find other metal objects, e.g., metal toys, pie plates, paint cans, etc. to add to the sound materials center.

5. All new objects should be explored for a wide variety of sounds.

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[1] A short inventory of metal objects can be found under Unconventional Sound Sources.

METAL ENCOUNTER

PHASE II - GUIDED EXPLORATION

OBJECTIVE: To focus on a wide variety of metallic sounds and sound-producing techniques.

PROCEDURE: 1. As a class, or in small groups, invite pupils to find two very different sounds with the metal objects they have selected from the sound materials center.

2. Allow an appropriate amount of time for exploration.

3. Individual pupils can perform their sounds for other group members or the entire class to imitate on other metal objects.

4. Discussion after performance and imitation of performed sound(s) can be focused with the following questions:

4a. How was the sound made?

4b. Can the sound be made in any other way?

Note: One or two minutes of exploration may be desirable before volunteers are selected to imitate a performed sound.

5. Pupils should be given two or three minutes of exploration time to investigate each of the following questions posed by the teacher.

What kind of sounds can you find to remind you of:

5a. a clock ticking

5b. water dripping

5c. a baby walking

5d. a father's heavy footsteps

5e. a ball bouncing

5f. teeth clattering

5g. a horse galloping

5h. a snake crawling

6. After each question and a period (two or three minutes) of pupil exploration, volunteers can be invited to perform their sounds.

7. After all sounds have been performed and taped, listen to the tape and try to identify the sound, e.g., clock ticking, snake crawling, etc.

METAL ENCOUNTER

PHASE III - EXPLORATORY IMPROVISATION

OBJECTIVE: To explore a variety of ways of producing and combining repeated patterns.

PROCEDURE:

1. Pupils should select three sounds which they can play over and over again in the same manner with metal objects.

2. Allow an appropriate amount of time for selection of sounds and rehearsals.

3. As a class, or in small groups, listen to the repeated patterns performed by individual pupils.

4. Discussion can be focused with the following questions:

   4a. Were any of the sound patterns difficult to repeat? Why?

   4b. If some were difficult to repeat, can you suggest an easier way of playing them?

   4c. Which two patterns do you think would sound good together?

5. Experiment with combinations of sound patterns as suggested by the pupils.

6. Tape combined performances of repeated patterns for immediate playback and discussion.

7. Listen to Symphony of Machines--Steel Foundry by Alexander Mosslov which is identified in the Discography.

8. Discussion of the listening example can be focused with the following questions?

   8a. What did you hear?

   8b. How could we build a sound machine?

METAL ENCOUNTER

PHASE IV - PLANNED IMPROVISATION

OBJECTIVE: To arrange repeated patterns in ways which are expressive and meaningful.

PROCEDURE:

1. Build a sound machine[2] using selected groupings of repeated patterns developed in the last learning experience or new ones.

2. Pupils can work in groups of three, four or five or the teacher or volunteer pupils can construct a sound machine by conducting members of the class in an improvisation.

3. Tape all the performances for listening and comparison of the differences and similarities.

    3a. Were they different? If so, how were they different? If not, what could we do to make the sound machines sound different from each other?

    3b. Were the sound machines the same in any way? If so, how were they the same?

4. When appropriate extend the discussion with the following?

    4a. Were the conductors satisfied with their results? If not, discuss how better results might be achieved. Pupils should dominate the discussion as much as possible.

Note: In order to successfully control entrances and exits of groups of performers, pupil conductors may have to develop simple gestures for starting and stopping.

5. The following questions posed individually during follow-up encounters may be considered to further stimulate thought and experimentation:

   What would happen if

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[2] A sound machine is a game in which the sound patterns, organized in various combinations are used to aurally represent the moving parts of an imaginary machine.

5a. all patterns or sounds were not played at the same time?

5b. all metal objects were silent some of the time?

5c. the sound machine slowly broke down rather than suddenly stopped?

5d. we had two sound machines--a big one and a little one?

6. Invite pupils to devise their own sound machines and perform them as solos, duets, trios or quartets.

METAL ENCOUNTER

PHASE V - REINFORCEMENT

OBJECTIVE: To develop other expressive possibilities with the sounds and musical ideas acquired with the use of metal materials by building and playing instruments made of metal material.

PROCEDURE: 1. The whole class can participate in gathering additional metal instruments. Any of the following would be useful:

1a. Triangles, or any kind of high pitched metal object which produces a similar sound.

1b. Bells, or similar sound-producing objects such as steel eggcups or suspended metal bars.

1c. Cymbals of all sizes from large suspended cymbals to small hand and finger cymbals with a variety of beaters, e.g., thin wooden sticks, straws, triangle beaters, etc.

1d. Gongs of all sizes or similar sounding objects such as pans, pan lids, and metal trays.

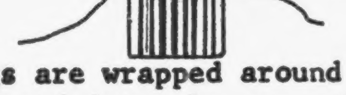
1e. Cow-bells, or hollow metal objects such as empty tins.

1f. Oil drums with a variety of beaters.

1g. Brake drums and hub caps and other used machinery.

1h. Metal whistles including the slide whistle.

1i. Oven shelves strung on two sides with string.



The two strings are wrapped around the index fingers and placed into the ears of the receiver. A second pupil performs for the receiving pupil by striking the oven shelf with a variety of beaters. The sound heard by the receiver can be captured on tape by wrapping the strings around microphones and engaging the record switch of the tape recorder.

1j. Other metallic sounding instruments can be made by the teacher and pupils. (Before trying to make instruments with children, the teacher should make them herself so that she is better equipped to serve as a guide and resource person.) Some examples of instruments in this category are metal chimes, nail scrapers and wood-block tambourines using soda bottle caps. These examples and others are well defined in Make Your Own Musical Instruments by Muriel Mandell and Robert E. Wood and The Musical Instrument Recipe Book by Emily Romney and Dan Watt, both of which are identified in the bibliography.

2. As additional instruments are accumulated and made, pupils should explore them for a variety of sounds as well as sound-producing techniques.

3. Invite two or three pupils to prepare a pattern of sounds with some of the new instruments. A tape loop[3] can be made with their patterns of sounds and serve as a unifying element in small or large group improvisations.

4. Pupils may be engaged in small or large group improvisations using the tape loop as a point of aural focus. One pupil may control the volume of the tape loop as other members of the class proceed with the improvisation.

5. If a second tape recorder is available, the improvisation should be taped for immediate playback and discussion.

6. The following may serve to direct the discussion:

   6a. What did you like best about this music?

   6b. Is there another way to make music with ear instruments?

---

[3] A tape loop is a length of tape with both ends joined by a splice. It allows for continuous repetitions of a sound, sounds, or a sequence. To operate a tape loop the following should be observed: The loop should be inserted over the tape heads of the machine in the same fashion used with conventional tape. Care must be taken to assure that the loop is not upside down. If the tape does not play, turn it over. The loop should be kept relatively taut in order to guarantee continuous feed and release from feeding wheels and spindles.

7. Experiment with all suggestions made by the pupils.

8. Listen to each of the following examples on different occasions and invite pupils to identify one idea they would like to try in their own music. The examples are listed in the discography.

    8a. Ostinato Pianissimo by Henry Cowell.

    8b. Double Music by John Cage and Lou Harrison.

    8c. Afro-Fuga by John Alling.

9. Pupils should be given the opportunity to experiment with new ideas in improvisations.

SAMPLE SERIES II

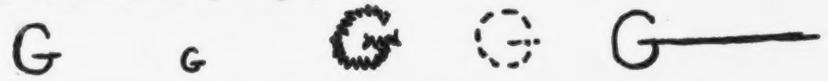
VOCAL ENCOUNTER

PHASE I - FREE EXPLORATION

OBJECTIVE: To explore a variety of vocal sounds using alphabetical letters as a reference.

PROCEDURE:

1. Print the letter "G" on the chalkboard.
2. Invite volunteers to interpret the letter vocally in different ways for the class or a small group.
3. Listen to all sounds volunteered until original ideas are temporarily exhausted.
4. Invite pupils to interpret the letter in different ways on the chalkboard, e.g.,



5. Invite (other) pupils to interpret visual symbols vocally as they are put on the board.
6. Conduct the class in various interpretations of the letter "K" by pointing to the various symbols.
7. Invite pupils to similarly conduct the class or portions of the class. In large classes more than one conductor can be used simultaneously by dividing the members of the class into sections or groups.
8. Record the conducted responses and listen to the tape.
9. Invite other pupils to conduct the class or portions of the class.
10. Record and playback all group responses.

VOCAL ENCOUNTER

PHASE I - FREE EXPLORATION

OBJECTIVE: To explore a variety of vocal sounds using alphabetical letters as a reference.

PROCEDURE:

1. Print the letter "Z" on the chalkboard.

2. Invite volunteers to interpret the letter vocally in different ways for the class or a small group. The teacher may want to put a capital letter "Z" on the board for reference.

3. Listen to all sounds volunteered until original ideas are temporarily exhausted.

4. Invite the pupils to interpret the letter visually in different ways on their own pieces of paper or the chalkboard. If they use individual pieces of paper, the following procedure may be considered:

    4a. Each child could be responsible for one variation of the letter.

    4b. As each child completes his visual interpretation, a piece of scotch tape could be applied to the sheet and attached to the board; or, the child can use his work as a reference in putting the letter on the board.

    Note: If the children are going to attach their papers to the chalkboard or bulletin board, it may be advisable for them to use crayon or a pencil with thick, soft lead for clarity and ease of recognition by other class members.

5. When all visual variations are put on the board, children can volunteer their vocal interpretations.

6. After each solo rendition of the letter is offered, the class or a portion of the class can imitate the solo performance by responding to a cue from the pupil who initiated the idea.

7. It may be desirable to tape and play back all solo and group responses.

VOCAL ENCOUNTER

PHASE II - GUIDED EXPLORATION

OBJECTIVE: To focus on a variety of vocal sounds and techniques for producing vocal sounds.

PROCEDURE:

1. Print the letter "G" on the chalkboard.
2. Invite pupils to interpret the letter vocally in different ways for the class or a small group. The teacher may want to put a capital letter "G" on the board for reference.
3. Record all volunteered sounds for playback and listening.
4. Listen to the tape after all sounds have been volunteered. The following questions may be used to focus attention after each new sound is heard:

    4a. How was the sound made?

    4b. Is it different from the next sound?
5. Listen to the next sound.

    5a. Is it different from the last sound?

    5b. How is it different or similar to the last sound?
6. The questioning procedure used in 4 and 5 above may be followed as long as it seems appropriate.
7. Occasionally, pupils may be asked to interpret the sound they hear coming from the tape recorder by drawing it on paper or at the chalkboard.

VOCAL ENCOUNTER

PHASE II - GUIDED EXPLORATION

OBJECTIVE: To focus on a variety of vocal sounds and techniques for producing vocal sounds.

PROCEDURE:

1. Using the following questions as a guide, the students should be encouraged to explore other possibilities with the letter "G".

    1a. How would you say "G" if you were very angry?

    1b. How would you say "G" if you were very sad?

    1c. How would you say "G" if you were very happy?

    1d. How would you say "G" if you were surprised?

    1e. How would you say "G" if you were scared?

    1f. How would you say "G" if you were very, very, tired?

2. Record and listen to pupil responses.

3. If a discussion seems appropriate, the following questions may serve as a guide.

    3a. How can we tell the difference between an angry "G" and a sad "G"?, a happy "G" and a scared "G"?, a surprised "G" and a very, very, tired "G"?

    3b. How can we make the difference between the sounds greater or bigger?

4. Experiment with all ideas volunteered by the pupils.

5. Pupils can explore the following ideas for producing additional letter sounds:

    5a. The highest "G" sound.

    5b. The lowest "G" sound.

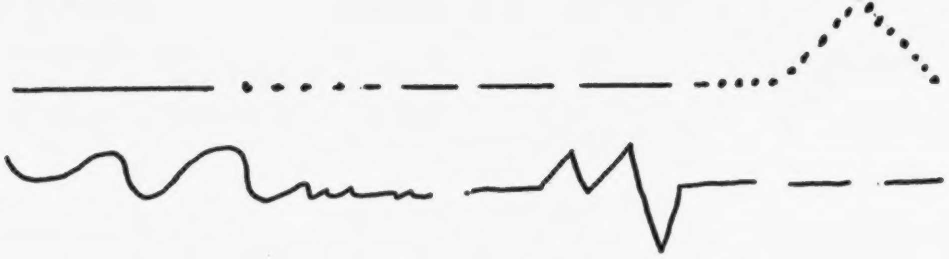
    5c. The softest "G" sound.

    5d. The loudest "G" sound.

5e. The funniest "G" sound.

5f. The bumpiest "G" sound.

6. Invite pupils to interpret the following shapes with "G" sounds:



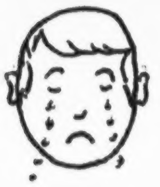
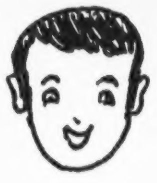
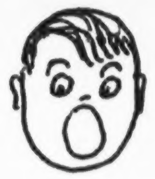
7. Pupils may draw other shapes and perform them.

VOCAL ENCOUNTER

PHASE III - EXPLORATORY IMPROVISATION

OBJECTIVE: To explore ways for combining vocal sounds to relate a mood or a special feeling.

PROCEDURE:

1. Use the sounds of a single letter to relate a mood or a special feeling.
2. Pupils can be paired and allowed an appropriate amount of time to plan a short story about  or  or  using only the letter "G".
3. The pupils can describe to each other what the picture is saying.
4. Following an appropriate amount of time, pupils can share their vocal interpretations of the picture with the class or a portion of the class.
5. Tape the performances for immediate playback and discussion.
6. Prepare pupils for listening by focusing their attention to the sounds and the pictures.
7. Pupils can decide which of the pictures was being described. The following questions may be used by the teacher after pupils have made a selection to match the performance.
   - 7a. Why do you think that the picture you selected is the one they used?
   - 7b. What do you think they were saying about the picture?

8. If further discussion seems appropriate, a comparison of the similarities and differences of the vocal improvisations may serve as a focus.

Note: Pupils may select pictures from magazines, weekly readers, newspapers, etc. for vocal descriptions on another day.

VOCAL ENCOUNTER

PHASE III - EXPLORATORY IMPROVISATION

OBJECTIVE: To simultaneously imitate vocal sounds and musical ideas generated by others.

PROCEDURE:

1. If a mirror is available pupils should look or stand in front of the mirror and describe what they see.

2. Pupils can pretend to be a mirror and imitate actions and sounds of the teacher.

3. A few simple gestures could be practiced to assist the pupils in understanding the nature of the encounter. The following examples may be considered for simultaneous imitation.

   3a. Keeping the rest of your body still, slowly raise your right hand.

   3b. Keeping the rest of your body still, slowly lower your right hand.

   3c. Keeping the rest of your body still, slowly twitch your nose, wiggle your jaw, slowly smile, slowly open your mouth, etc.

4. Encourage pupils to imitate every gesture and sound as simultaneously as possible.

5. Invite a pupil to lead the class.

6. Introduce letter sounds to the game by saying them slowly so that pupils can imitate the gestures involved, as well as the sound being produced.

7. Invite pupils to lead the class or portions of it.

8. Pupils can be paired and allowed an appropriate amount of time to experiment with the game. They should take turns pretending to be the mirror.

9. After an appropriate amount of time pupils can perform for other members in the class.

VOCAL ENCOUNTER

PHASE IV - PLANNED IMPROVISATION

OBJECTIVE: To organize vocal sounds in expressive and meaningful ways.

PROCEDURE:

1. Making the most expressive use of letter sounds, pupils should be encouraged to plan a skit or tell a short story about a subject familiar to them, e.g., The Haunted House, Traffic Jam, On the Beach, etc.
2. Sounds of a single alphabetical letter or many alphabetical letters may be used as a reference.
3. Determine appropriate groupings and divide the class accordingly.
4. Allow an appropriate amount of time for planning.
5. When individuals and groups of pupils have completed their preparations, record the performances.
6. Play back the results for listening pleasure and discussion.
7. Some of the following may be used to focus or start a discussion.
    - 7a. What did you like best about this sound story or skit?
    - 7b. Would you like to listen to it again sometime? Why?
    - 7c. What letter sounds did you enjoy hearing the most? Why?

VOCAL ENCOUNTER

PHASE V - REINFORCEMENT

OBJECTIVE: To develop other expressive possibilities using vocal sounds.

Note: The following suggested activities may be used for developing encounters:

1. Make paper megaphones by rolling a sheet of paper in from one corner until you have a large opening at one end and a small opening at the opposite end. The megaphones can be used to direct and somewhat amplify the voice. They can be used for special effects or altering letter sounds.

2. Isolate five minute periods of time during the day and communicate only with letter sounds and gestures. Discuss the results.

3. Draw shapes on the chalkboard for pupils to perform with letter sounds (see procedure number six in the second encounter of Phase II in this sample series). Invite pupils to draw compositions for themselves or for others to perform.

4. Using only letter sounds, plan an improvisation based on the sounds of nature.

5. Explore a variety of ways of expressing a single word, e.g., splash, sssplash, splashshshsh, splaaash, s/p\l-a/s\h .

   Use this sample series for developing encounters with word sounds.

6. Sing songs that use letters or words previously explored by pupils. Discuss expression of letters or words by relating to the context of the song.

7. Carry on a portion of the day in which only whispering is permitted and discuss the results.

8. With a group of pupils or an entire class, create sounds to suggest single drops of water; to suggest rain; a stream; a waterfall; a river; an ocean. Compose a piece of "Water Music" by sequencing this variety of water sounds produced with the voice. Invite volunteers to conduct improvisations.

9. Create songs in solo and group improvisations by using very short poems or allowing the pupils to invent their own words.

10. Listen to Sound Patterns by Pauline Oliveros (identified in the Discography) and invite pupils to explore similar vocal effects.

11. Explore vocal sounds with lips closed and lips opened. Plan improvisations using both kinds of sounds.

12. Explore letter sounds, word sounds and other vocal sounds by varying the sounds of the voice with cardboard cylinders, metal buckets, ice cream containers, etc.

Note: For additional ideas incorporating vocal sounds see When Words Sing by R. Murray Schafer listed in the bibliography.

GLOSSARY OF TERMS

Creativity in Music. This term refers to activities in which the pupil uses aural imagination, aural insight, and aural judgment to fashion sounds into music. The term does not apply to skill-drills in notational formulae or activities where the imagination is focused on other than aural expression.

Deductive Thinking. In the process of deduction the individual applies known concepts or principles to new situations. It is the ability to make use of familiar conclusions to solve unfamiliar problems. Deductive thinking is the reasoning process which allows a conclusion proven in one circumstance to be used as the basis for action in another circumstance.

Developmental Phases of Musical Exploration (DPME). The operational framework of INTERACTION to guide, shape and stimulate musical growth.

Devised Notation. A free system of storage and retrieval that is constructed to meet the unique requirements of a particular piece. It may be diagrammatic, descriptive narrative, pictorial or a combination of any of these. It may deal with details very precisely or be intended for loose interpretation.

Dynamics. The degree of loudness or softness of sound.

Encounters. Learning experiences contained within a series which identify specific objectives for the child and procedural recommendations for the teacher.

Exploratory Improvisation. The discovery of new relationships of sounds and the ordering of these relationships into a variety of expressive combinations and patterns.

Form. The plan, aural design, the ways sounds are put together in a piece.

Free Exploration. The manipulation of sound sources to discover a wide variety of sounds and sound-producing techniques.

Guided Exploration. The investigation of sound sources within limitations to discover additional sounds and sound-producing techniques.

Idiomatic Music Concept. A substantial and transferable idea or practice which has or has had extensive application within a specific idiomatic context, geographic setting, stylistic practice or time span. It can be generally identified as either a transitory common practice in the evolution of music, or as an idea unique to certain cultural environments.

Inductive Thinking. Inductive thinking is the student's ability to make generalizations; to draw small items of information together to form concepts; to use data, observations and facts to interpret larger ideas and understand principles. It is the reasoning process in which information is assimilated to arrive at a broad conclusion.

Inherent Music Concept. A broad characteristic or fundamental idea which is common to the music of many idioms, styles and cultures. It transcends mere period practices and theoretical schemes.

Interval. Pitch span between two notes sounded simultaneously or successively.

Melody. Series of successively sounded tones felt to possess internal organization.

Music Concept. A clearly defined central idea which will serve as a basis for action in a variety of circumstances. It is also a concrete point of reference upon which decisions and judgments can be securely made and from which the further growth of logic can evolve.

Music Data. Factual information which may or may not be related to concepts but is considered essential either to participation or to further involvement.

Music Laboratory. An educational environment created to encourage, support and facilitate pupil involvement and pupil responsibility in the music learning process. It is a class functionally and structurally designed to stimulate inquiry, discovery, creativity, and critical thinking.

Music Percept. An item or idea which is recognized or sensed in a single setting thus bringing clarity to that setting. It is sometimes the first factor in conceptual development.

Noise. Complex of sounds in which no definite pitch can be detected.

Parameter. A characteristic element or constant factor, e.g., the parameters of any given sound are pitch, duration, volume, timbre.

Pitch. The comparative highness or lowness of sounds.

Planned Improvisation. The organization of patterns and combinations of sounds into compositions which are most expressive and aesthetically satisfying to the child.

Pulse. The underlying beat (sometimes not heard but only sensed) that may help to create a feeling of motion in music.

Reinforcement. The diversification and intensification of discoveries made by the child in the exploratory and improvisational phases.

Series. A plan for involving the child in all phases of the DPME at his level of comprehension, interest and physical development.

Tempo. Rate of speed at which a musical passage moves.

Timbre. The quality or color of sound.

UNCONVENTIONAL SOUND SOURCES

PAPER

- construction paper
- wax paper
- tissue paper
- newspaper
- light-weight cardboard
- brown bag paper
- white composition paper
- white stationery paper
- sandpaper
- cardboard strips
- napkins
- magazines
- cardboard dividers
- foils
- cardboard boxes
- paper balls
- old books
- egg crates
- cardboard cylinders
    - toilet tissue cylinders
    - paper towel cylinders
    - carpet cylinders
    - material cylinders
- corrugated cardboard
- fruit crates
- straws
- milk containers
- paper mache
- toys
- paint buckets
- ice cream containers
- cigar boxes
- cups

RUBBER

- bands
- balloons
- nose horn
- balls
- innertubes
- tires
- toys

GLASS

- soda bottles
- jugs
- toys

PLASTIC

- funnel (horns)
- ruler
- straws
- food containers
- bottles
- sprayers
- toys
- brushes
- buttons
- combs
- old records
- plastic strips
- boxes
- tools
- cups

WOOD

- ruler
- spatula
- yard stick
- bowls
- bamboo sticks
- tongue depressors
- pencils
- blocks
- whistles
- toys
- tables
- chairs
- clothespins
- poles
- popsicle sticks
- broom handles
- kitchen utensils
- containers
- strips

FOOD

- condiments
- seeds
- kernels
- rice
- coffee
- sugar
- corn flakes
- bread crumbs
- grains
- macaroni
- coconut shells

METAL

- sheet metal
- saws
- tools
- can tops
- barrel tops
- pie plates
- oven shelves
- wire
- cans
- pails
- baking pans
- cookie sheets
- pipes
- strips
- whistles
- toys
- tables
- chairs
- washtub
- nails
- broom handles
- screws
- washers
- bottle caps
- paper clips
- funnels
- scissors
- bolts
- foils
- kitchen utensils

waste basket
springs
machines

OUTDOOR MATERIALS

dirt
pebbles
stones
leaves
grass
snow
rain
twigs
branches
pine cones
eucalyptus pods
water

OTHER

string
rope
twine
flower pots
calfskin
chamois

BIBLIOGRAPHY

I. Operational References

Mandell, Muriel and Wood, Robert E. Make Your Own Musical Instruments. New York: Sterling Publishing Co., 1968.

A step-by-step description of how children can make instruments from a variety of simple objects and materials. Included are shakers and rattles, bells, chimes, drums, strings, and wind instruments.

Romney, Emily and Watt, Dan. The Musical Instrument Recipe Book. Newton, Mass.: Elementary Science Study of Education Development Center, Inc., 1968.

In addition to the categories of instruments identified in the first reference, this book contains other categories; pipes and horns, telephones, and rhythm instruments.

Schafer, R. Murray. Ear Cleaning. Toronto, Canada: BMI Canada Limited, 1967.

This gifted Canadian composer-educator describes how he involved his first-year college students in free discussion, experimentation, improvisation and objective analysis of the elements of music. Many of his techniques and procedures can be adapted for use in the primary classroom.

Schafer, R. Murray. The New Soundscape. Don Mills, Canada: BMI Canada Limited, 1969.

Written to sensitize the reader to the sounds--natural, human and technological--in our environment and the possible effects of these sounds on the evolution of music. Young children can develop a greater appreciation of the sounds around them by engaging in some of the experiments and activities described in this book.

Schafer, R. Murray. When Words Sing. Ontario, Canada: BMI Canada Limited, 1970.

Describes many practical and imaginative ways to involve children in the expressive use of their voices. Most of the learning experiences incorporate the use of raw vocal sounds which encourage spontaneous and uninhibited participation.

Self, George. New Sounds In Class. London: Universal Edition, 1967.

Offers a brief description of contemporary music and identifies some devised notational systems which children have used successfully in composing music of their own.

II. Educational and Philosophical References

Bruner, Jerome S. The Process of Education. Cambridge: Harvard University Press, 1963.

The author presents convincing evidence that the basic concepts of science and the humanities can be grasped by children far earlier than has ever been thought possible. The teacher's task is to present the fundamental structure of the material to be learned in a form that can first be apprehended intuitively by the child, and then later, through instruction, to build upon this intuitive understanding.

Eble, Kenneth E. A Perfect Education. New York: Collier Books, 1966.

Describes how the child's natural mode of play has considerable order and leads to significant learning. The author's observations on how children learn may suggest some structural and procedural classroom alternatives.

Featherstone, Joseph. The Primary School, Revolution in Britain. Washington, D. C.: The New Republic, 1967.

The components of the learning environment which best accommodate the natural learning styles of children is the major theme of this article. Individualized learning, differentiated staffing, thought processes, exploration and experimentation are some of the areas discussed.

Holt, John. How Children Fail. New York: Pitman Publishing Corp., 1964.

The author analyzes the strategies children use to meet the demands made on them, the effect of fear and failure on children, the distinction between real and apparent learning, and the way schools fail to meet the needs of children. His conclusions point the way toward helping teacher and parents make children's daily experiences in school

and home more meaningful.

Holt, John. *How Children Learn*. New York: Pitman Publishing Corp., 1967.

Describes how the author feels failure can be eliminated. His observations challenge the teacher to reevaluate her knowledge of the young, examine her attitudes toward them, and reconsider her standards of training and educating them.

Holt, John. *The Underachieving School*. New York: Pitman Publishing Corp., 1969.

Traditional schooling receives strong condemnation by the author who considers it a degrading experience for both teacher and student. A teacher's role, he argues, is to "give children as much help and guidance as they need and ask for, listen respectfully when they feel like talking, and then get out of the way."

Neill, A. S. *Summerhill, A Radical Approach to Child Rearing*. New York: Hart Publishing Co., 1960.

The premise of this book is that children learn best in an atmosphere of love, freedom and self-government. Even though no school like Summerhill exists in the United States, this book will challenge the teacher to rethink her own approach to children.

Postman, Neil and Weingartner, Charles. *Teaching As a Subversive Activity*. New York: Delacorte Press, 1969.

The authors vigorously attack the methods of the Educational Establishment and suggest as an alternative a new education based on the inquiry method. They propose a host of specific and practical steps to bring personal meaning to the classroom.

Rogers, Carl R. *Freedom to Learn*. Columbus: Charles Merrill Publishing Co., 1969.

The author feels that students can be trusted to learn and to enjoy learning when a facilitative person sets up an attitudinal and concrete environment which encourages responsible participation in selection of goals and ways of reaching them.

Tyler, Ralph W. Basic Principles of Curriculum and Instruction. Chicago: The University of Chicago Press, 1965.

A rationale for viewing, analyzing and interpreting the curriculum and instructional program of an educational institution. The rationale identifies the fundamental issues which must be faced in developing any curriculum and plan of instruction.

DISCOGRAPHY

Alling, John. Afro-Fuga. Golden Crest Records, Inc. CR 4016

Two percussionists engage in a musical dialogue against a backdrop of eight percussionists who combine to set up an exotic Afro-Cuban type beat.

Antheil, George. Ballet Mecanique. Columbia ML 4956

Scored for two airplane propellors, automobile horns, player pianos, anvils, bells, and other percussion instruments.

Ashley, Robert. She Was a Visitor. Odyssey 32 160156

The title sentence is repeated by a lone speaker throughout, while separate phonemes of the sentence are picked up freely by group leaders and are relayed to group members who sustain them softly for the duration of one natural breath.

Benson, Warren. Variations on a Handmade Theme. Golden Crest Records, Inc. CR 4016

A short composition scored for eight hand clappers: two very high pitch, two high pitch, two medium pitch, and two low pitch.

Cage, John. Amores. Time 58000

Using only sounds produced by wood, e.g., high wood blocks, medium wood blocks, and low wood blocks.

Cage, John, Harrison, Lou. Double Music. Time 58000

Employs only sounds produced by metal, e.g., water buffalo bells, brake drums from old automobiles, thundersheets, bronze kettles, etc.

Cowell, Henry. Banshee. Folkways FX 6160

An example of the novel use of an existing instrument, scratching, plucking, pounding, and sweeping the strings of the piano.

Cowell, Henry. Ostinato Pianissimo. Time 58000

A repeated pattern played with a variety of percussion instruments including eight rice bowls.

Harrison, Lou. Canticle No. 1. Time 58000

Two short movements employ a large battery of Cuban instruments, e.g., four sets of claves, quijada (jawbone of a mule), cowbells, maracas, gourds, etc.

Honegger, Artur. Pacific 231. London LL 9119
Orchestral composition simulating various movements of a locomotive, e.g., starting, gradually increasing speed, speeding, slowing down, etc.

Ivey, Jean Eichelberger. Pinball. Folk 33436

A short electronic composition based on the sounds of a pinball machine.

Le Caine, Hugh. Dripsody. Folk 33436

A short electronic composition developed from the sound of a single drop of water.

Mosslov, Alexander. Symphony of Machines--Steel Foundry. Folkways FX 6160

An aural picture of some sort of factory, with its relentless, pounding, clanging movement of machines.

Oliveros, Pauline. Sound Patterns. Odyssey 32 160156

Vocally improvised pitches within broad areas of high, medium, and low with an assortment of sounds, e.g., whispers, tongue-clicks, lip-pops, and finger snaps, altered electronically.

Partch, Harry. Music of Harry Partch. Composers Recordings, Inc. CRI 193

Music developed out of hobo speech, elastic octaves, and percussion instruments made from hubcaps, tuned light bulbs, jars, suspended liquor bottles, chemical jars, etc., all made by the composer.

Partch, Harry. The World of Harry Partch. Columbia MS 7207

Music written for instruments made by the composer using a variety of wood, glass, paper, plastic, and metal materials.

Roldan, Amadeo. Two Retmicos. Time 58000

Two short movements employ a large battery of Cuban instruments, e.g., four sets of claves, quijada (jawbone of a mule), cowbells, maracas, gourds, etc.

Sound Effects. Audio Fidelity Inc. DFS 7006, -10,-15

Authentic sounds found in a variety of environments.

Villa-Lobos, Heitor. The Little Train of the Caipira. Columbia CL 798

An aural picture of a little train making its way through Brazilian communities.

Note: The annotations identify one or more of the unique characteristics represented in the music.

APPENDIX C

MMCP

TEACHER REEDUCATION PROGRAM

Format for Workshops and In-Service Programs

Ronald Thomas

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TEACHER REEDUCATION PROGRAM

Introduction

During the course of this project a vast number of music teachers have come in contact with project ideas. Many thousands attended brief sessions, ranging from one to six hours, at conventions and meetings. Others have watched demonstration programs, read articles, or been drawn into discussions which centered around MMCP curricular ideas. Over 1,100 music educators have attended official in-service or workshop programs, while at least that number have been introduced to the project's educational direction in other college workshops.

Through these experiences it has been possible to ascertain the processes for teacher reeducation that make a difference, that assist teachers to understand and to gain a sense of security with the educational plans devised by the project. The project has also been made aware of those processes and methods that do not work, that either contribute to misunderstanding or turn intended educational experiences into classromm gimmicks. The term reeducation is certainly appropriate, for the Synthesis and the Early Childhood Curriculum demand perspectives and operational modes which are different from normal practice. The problem of preparing teachers is not merely one of passing on information. It involves developing a new line of thought about purpose, objectives, procedures, and the interpretation of basic musical concepts.

One thing is clearly evident. The written curricular materials prepared by the project are not sufficient to allow educators to use the curricular ideas effectively. Regardless of how well the materials are written or read, they are understood within a frame of reference that is inconsistent with the nature of the educational purpose and process. The primary reason for this is that the curriculum depends heavily on musical behaviors, while teachers have been largely conditioned to a standardized perspective of educational behavior. This often results in a broad misunderstanding of the nature of the written materials. The logic of the entire program, from rationale to strategies, is not evident to the teacher who has been trained to consider education in terms of methods. Even concepts of music are misread. The MMCP deals with the active search for solutions to musical problems, while the majority of educators concern themselves with the study of problems already solved by someone else. The sequence of the cycle structure, therefore, is seldom more than a point of controversy to those whose acquaintance with the project is only through written materials.

There are only two solutions to the problem of assisting teachers to competence and confidence within the MMCP music lab. The first is to create college programs which stimulate a breadth of perspective rather than musical and educational closure. The second is to provide reeducation programs which deal with critical thinking, intrinsic experience in musical behaviors, and personal practice in discovery processes. Only through a complete immersion in the vital analytical, judicial and creative atmosphere of the music lab are teachers able to perceive the alternatives for music education developed by MMCP.

The following plans deal with the reeducation programs for experienced music educators. They have been prepared to serve as a basis for both in-service programs in individual school districts and summer workshops sponsored by universities. The format and procedures which are suggested allow for a great deal of flexibility in actual use. They are intended as guidelines, not as hard and fast formulae.

Purpose

The purpose of MMCP reeducation programs is to create an experiential environment where teachers, through their own explorations, develop confidence in themselves as creative musicians and an understanding of the objectives and processes of the music laboratory.

Objectives

The objectives of the reeducation programs are:

- to stimulate and reinforce the creative musical capabilities of music educators.
- to motivate music educators to become actively and intrinsically involved with music on their own level of competence and insight.
- to increase the music educator's sensitivity to sounds and a wider spectrum of music.
- to assist music educators to a broader understanding of the structure and nature of comtemporary music.
- to stimulate concern for the potentials and responsibilities of music education and an intense regard for the artistic, educational, and personal relevancy of music education.
- to broaden perspectives about the role of the teacher, the capabilities of the students, and the products of education.
- to introduce educational objectives which include concern for cognition, skills, attitudes, and aesthetics.
- to assist music educators to understand and develop confidence in exploring new educational processes, goals, and substance.

Structure of the Reeducation Programs

Each workshop must be a music lab. The experience for the teacher in the workshop must be totally consistent with the type of experience advocated for students in the schools. The teachers must be explorers and investigators. They must have opportunities for personal musical discoveries and must experience the processes of musical involvement recommended for students. Every teacher must become a composer and deal creatively with musical materials and ideas. They must also have ample opportunities to conduct and perform music, not the same old music that they have used in their classrooms, but music that extends their thoughts and makes involvement a challenge and a risk. Each teacher should dig into music which is new to him so that the workshop will not be a reiteration of commonplace ideas and experience. The lab experience as described in the Synthesis should be duplicated in the reeducation programs, but it must always be at the maximum level of the teachers' musicianship rather than at presumed student levels.

The minimum time for an effective workshop is 60 hours of class time with at least 30 hours of outside assignments. During the first 30 hours it is most advisable not to introduce discussions of classrooms or pupils. The experience should be highly focused on personal involvement in music rather than on the transferral of this experience into educational strategies. During the latter half of the reeducation program, discussions of possible plans for the classroom can be related directly to the personal experience of the teachers in the workshop.

In setting up the workshop it is advisable to establish two sections, the exploratory lab section and a seminar section. While these may be planned as two different areas, in practice they will undoubtedly overlap considerably. It is recommended that in the lab section the following be included:

1. from 8 to 10 strategies ranging from sound pieces to complicated instrumental and vocal structures (all at the teachers' levels of musicianship).

2. A considerable amount of improvisation on everything from vocal and object sounds to 12-tone rows.

3. experience in the operation of large group, small group and individual compositional strategies.

4. problems dealing with the mechanics of transposition, formal notation, scoring, and devised notation.

5. demanding experiences in conducting, performing and "critiquing".

6. listening experiences which bear directly on personal musical problems in strategies.

7. opportunities to operate basic electronic equipment and get involved with the mechanics of tape manipulation, loops, sound generators, filters, etc. Of course this should all be achieved in the process of electronic music composition.

The seminar experience should include:

1. a strategy dealing with alternative educational philosophies.

2. discussions of all aspects of the Synthesis including the overall logic from rationale, to process, to cycle structure.

3. practice in preparing new strategies and extending and adapting the sample strategies of the Synthesis and Early Childhood Music Curriculums.

4. practice in presenting strategies to the class.

5. think-tank sessions in which alternative solutions for environments, scheduling, materials, strategies, and all other facets of the curriculum are explored. The purpose is to practice the finding of alternative solutions.

6. brief description of MMCP history and scope of operations.

Materials and Space Requirements for Workshops

To assure the successful operation of the training program, there are a number of physical and material requisites. The recommendations given here should be followed as closely as possible for these are basic requirements.

Space Requirements. Because of the laboratory nature of the workshop, the workshop room should be large enough to accommodate the participants with all of their instrumental paraphernalia. It should allow them to function as one group without crowding, and in several smaller units which can operate independently. It would also be advantageous if two or three smaller rooms (or large practice rooms) were available for small group work during the school day, during evening hours, and on weekends.

Instructional Materials. It will be necessary to have a sufficient number of copies of the Synthesis for all of the participants. Copies of Interaction and the feasibility studies will also prove of value. Philosophy summaries, attitudinal questionnaires, and record reference materials will be needed for strategies within the workshop.

Equipment. The following equipment should be made available for general use in the workshop lab:

1. two good quality stereo tape recorders should be made available at all times. The Sony 630 is recommended. Comparable recorders with three heads, three speeds, sound-on-sound, and echo may be substituted. Four additional recorders will be required for two to three days during time spent on electronic music. If possible, these should have the same characteristics as those used daily.

2. one tape splicing set, for workshop use, including a splicing block, blade, marking crayon, and splicing tape or tabs.

3. five seven-inch reels blank recording tapes.

4. one overhead projector, one six-foot screen, and one stereo record player, for daily use.

5. three stereo headphones, for use with the record player, and a headphone junction box for simultaneous use of the three headphones.

6. a grand piano, and a second piano, if possible; chimes; orchestral bells; two xylophones; timpani (four, if possible); five temple blocks; a tam tam; a suspended cymbal; tuneable hand drums; a snare drum; a bass drum; assorted sticks and beaters; a slide whistle; Orff instruments (including all chromatics) if available.

Equipment available for purchase by participants should include blank recording tape, blank transparencies, music staffed transparencies, transparency pens, tape splicing sets, and music manuscript paper.

Advance Instructions to Participants. From previous experiences, it is suggested that each participant be informed by the sponsoring school of the school's policy in the granting of credit for this workshop. Participants should also be strongly encouraged to make arrangements to live on the campus. They should know that they should bring with them an instrument on which they have some performance ability, even if that performing ability is not too polished. They should know in advance what equipment is needed and available for purchase.

Other Services to be Made Available to Participants. Since the workshop curriculum encourages musical exploration, the music library and the library of recordings with its listening facilities should be open for use by participants. It would also be a help if large instruments which are awkward to transport (string basses, cellos, etc.) were available for participants who play them. Mimeograph, Thermofax, and Xerox (or comparable) processes will also be needed almost daily.

Team Teaching

Since many schools are beginning to use team teaching, it is advisable where possible to utilize teaching teams in workshops. This will set up a practical situation in which workshop participants can get first hand experience with the team teaching processes. In team teaching a few "do's" and "don'ts" are the following:

1. When a class leader is needed, only one team member should serve this role at a time; alternate this responsibility.

2. When not leading class, the other team member should assume a supporting role by operating equipment, taking care of classroom mechanics, or just displaying a genuine interest in the operation of the class.

3. Always give your partner a chance to think, don't jump in on impulse.

4. Pre-plan all work in detail together. Keep a log of activities and observations and inform each other after every session of individual responses and questions.

5. Be candid with each other in private.

6. Never argue with each other in front of the class.

7. Never discuss the team partner with participants.

8. Never interrupt the class by carrying on a private conversation which disturbs the class.

9. Never be inattentive to the partner or the class.

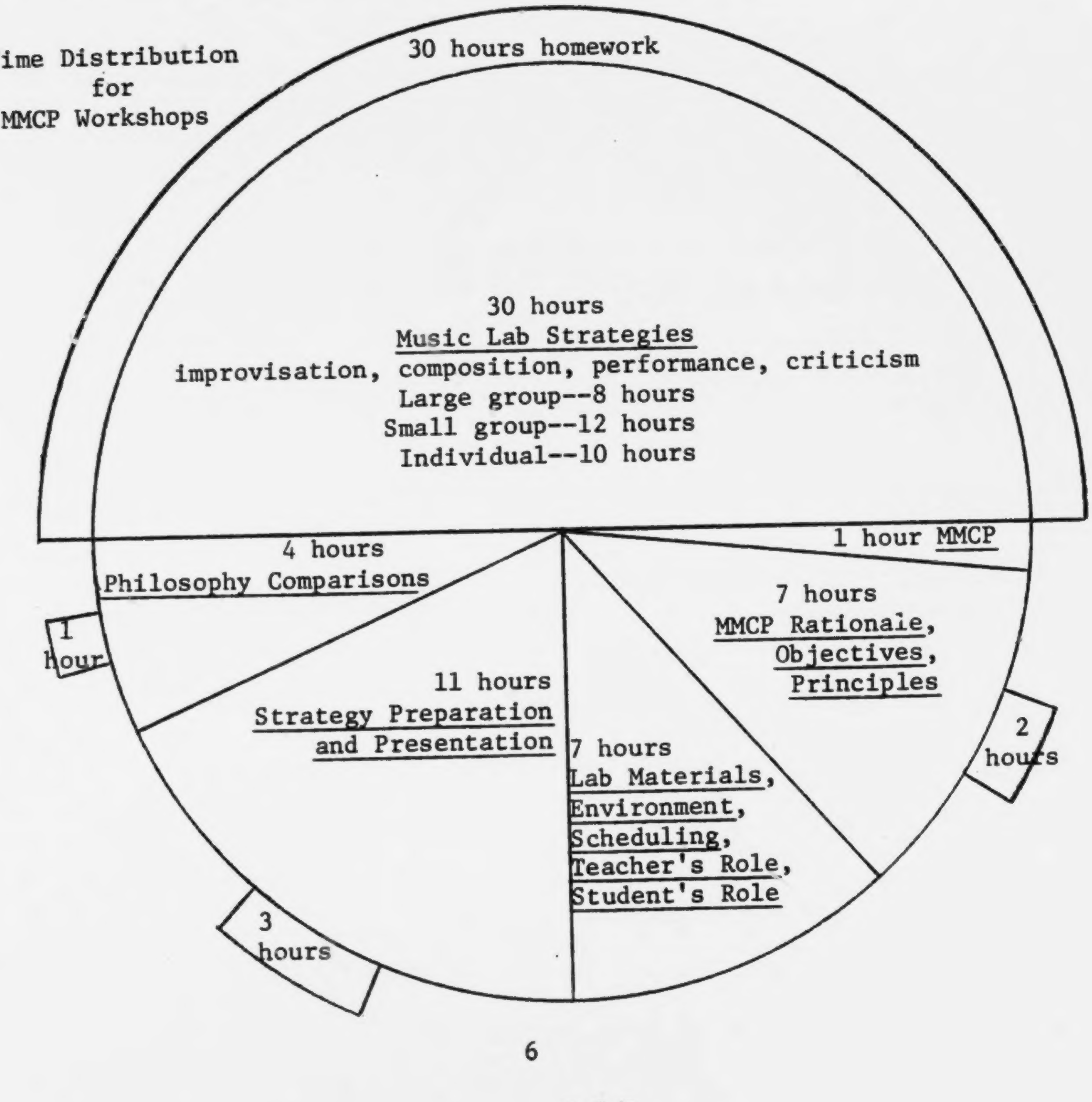
10. Never work on workshop plans during class.

11. Never have a private conversation between team members which isolates the class.

Teachers' and Participants' Roles. The manner of operation and the responsibilities of the teacher of the workshop should be consistent with the teacher's role as outlined in the Synthesis. As a general rule, the teacher should be the center of attention for no more that 10 per cent of the time. All conducting, performance and much of the discussion should be the responsibility of the students with the teacher guiding, stimulating and assisting where individually needed.

Scheduling Reeducation Programs. Whenever possible, reeducation programs should be scheduled when teachers are removed from day-to-day class responsibilities. The summer vacation period and recess weeks in winter or spring are ideal times. When such arrangements cannot be made, classes should be scheduled for the longest possible session at least once a week. This, coupled with two or three day-long sessions, while less efficient than a highly concentrated workshop program, can have positive results.

Time Distribution
for
MMCP Workshops



PHILOSOPHY COMPARISONS

Essentialism

Synonyms	Conservative in essence; traditional education; the past - intellectual and cultural heritage.
Branches	Idealism - world of "absolutes" or universal truths, world of the mind; realism - truth as observable facts, but universal in essence; summaries of human experience.
Educational Philosophy	Time tested content; orderly sequence; inherited principles; guided discipline; subject matter centered education; mind of man must be trained; knowledge is the disclosure of reality; education is a reproductive process; child to be guided, disciplined, and instructed - habits formed; stress intellectual training and building character; teach for mastery of factual information.
Curriculum	Languages; science; history; math; natural and social sciences; philosophy; humanistic "disciplines".
Music	Appreciation and "aesthetic response," enrichment; music as a curatorial art - an art with permanent values (Beethoven, Mozart, Brahms, etc.); "connoisseurship" - development of knowledge, skills, and judgment (taste), awareness of the continuity of the musical tradition.

Progressivism

Synonyms	Pragmatism; progressive education; "the world of experience" - past and present.
Branches	Pragmatism (down to earth, useful); progressivism ("significant change").
Educational Philosophy	Put ideas to work; learn by doing; knowledge exists for the effect of experience; growth through experience; intelligence is a product of evolution; child-centered education; learning is a natural expression; learning based on interest, effort, purpose, intelligence, and habit; environment is critical for learning; develop "public taste"; solve problems through intelligence - a product of pertinent "experiences" which develop skills, abilities, and critical facility.
Curriculum	Core curriculum; correlation of subject matter; humanities; mathematics and sciences (practical); the arts; natural and social sciences.
Music	Music as social value and functional art (marching bands, Rodgers and Hammerstein, entertainment for the Rotary Club, etc.; music as a "creative art" for personal growth and development of "functional" personal judgments and values.

Reconstructivism

Synonyms	New progressivism; new education goals (contribution of behavioral sciences); the future (projected from experience of past and present).
Branches	Utopian (concept of ideal world); reconstruction ("crisis centered" - meet needs of world)
Educational Philosophy	Strive for education to achieve new goals; emphasis on needs of the future; expanded government influence; concern for mankind and the world; the present is a revolutionary period; other philosophies fail to provide specific goals; appreciation of life; values of participation; values of creativity in a truly functional manner; approach education through problem solving, discovery, and inquiry; education active, not passive; goal seeking and social consensus vital; social self-realization, and individual and group values.
Curriculum	Humanities; behavioral sciences, including psychology, anthropology, and sociology; political science and economics; examination of ideologies; science and history; the arts; communication theory and practice - all spheres; adult and continuing education - all subjects.
Music	Music as "aesthetic education", including emphasis on "creativity"; music as an academic subject; music as a continuing process (Cage, Babbitt, experimenters, etc.); music as vital force for individual and group expression, aesthetic development, as communication, and powerful interpretive force for cultural understanding.

APPENDIX D

M M C P

ELECTRONIC KEYBOARD LAB

Lenore Pogonowski
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ELECTRONIC KEYBOARD LABORATORY

Introduction

The electronic keyboard instrument is a recent invention which has unique possibilities for musical exploration. With this instrument the child has a wide range of choices of sound and can immediately produce sounds of good quality. Tone controls are easy to manipulate and volume controls allow the student to experiment with dynamics even in the first class period. The noise problem in the classroom associated with sound exploration on most instruments does not exist here. By using headsets, no one except the student at the keyboard need know that musical exploration is under way. On the other hand, with many of these instruments it is possible for the sound of a number of instruments to be linked together as well as played individually through speakers. This permits small groups to work together or large groups to listen or improvise.

Another feature of the electronic keyboard is the opportunity for individualized instruction. When a number of electronic keyboard instruments are set up in a classroom, they are usually wired directly into a console. The teacher controls the console and can readily listen to any pupil in the classroom and assist on a personal basis.

These possibilities for extensive musical exploration definitely suggest a laboratory type program where personal investigation and discovery are encouraged. The keyboard study has been prepared to deal with cognitive, attitudinal, aesthetic and skill objectives in the total range of musical behaviors. It was designed to assure that the keyboard experience would be more than a conditioning process for the development of dextrous (physical) and translative (reading) skills. While these skills serve to enhance, expand and bring clarity to cognitive, attitudinal, and aesthetic objectives, an overemphasis on skills may divorce the student from active involvement in basic musical behaviors. In this study the student is a musician and operates as a composer, performer, conductor and evaluator at the maximum level of his musical understanding. His skills are developed from his own needs in this process of musical involvement.

The Structure of the Keyboard Laboratory

The special considerations of this laboratory are the instrument and the expectations of the pupils. For most students the keyboard presents a definite challenge. They wish to do more than simply explore the instrument. They want to acquire operational skills. While this personal motivation is of great importance, the learning experience must also challenge the creative imagination of the pupils and stimulate musical judgments. This curriculum was designed to emphasize aural sensitivity, discrimination, and concept growth. Of course, it is also concerned with those skills which relate directly to the keyboard, but the focus in this study is on music. The process of learning, involves personal creativity, individual exploration, and musical judgments. This curriculum was designed to emphasize aural sensitivity, discrimination, and concept growth. Of course, it is also concerned with those skills which relate directly to the keyboard, but the focus in this study is on music. The process of learning involves personal creativity, individual exploration, and musical judgment.

Early encounters (activities) of the curriculum do not employ formal notation, but rather focus the child's attention entirely on the sounds that he produces. Sensitivity to sound and judgments of sound qualities, differences, and relationships take precedence over all translative mechanics. When notation is introduced it never becomes a substitute for the pupil's aural judgments. Notation is a positive factor in the learning experience when the student needs symbols to recall, expand and refine his aural thought.

Often a number of encounters are sequenced to deal with a series of related or extended learning experiences. The series derives its structure from the Developmental Phases of Musical Exploration (DPME) of the Early Childhood Music Curriculum. In this there are five phases: 1) free exploration; 2) guided exploration; 3) exploratory improvisation; 4) planned improvisation; 4) reinforcement. In the series the students have opportunities to hear in their own way, to exercise their own styles of learning at their own rates of speed. First, they explore freely, then under guidance, and improvise on the basis of their own explorations and judgments. They practice the musical behaviors of the composer, performer, and critical listener by working directly with the materials of music.

The encounters are the individual learning activities which involve students in creative musical thought. When planning an encounter, it is necessary to establish an objective and plan the procedural steps that will lead to the objective. Sample encounters are included in this curriculum plan. Many encounters can be designed for one particular phase of the DPME (Developmental Phases of Musical Exploration) before proceeding to subsequent phases. In fact, in many classroom situations there will be a need for several learning experiences which relate to the objective of a given phase. Since the sensitivity of the teacher to the students' discoveries will govern the number of encounters per phase, utmost flexibility must be exercised in implementing a series of encounters.

At beginning stages of operation students generally need a wide variety of experiences in exploratory and improvisatory encounters. There is usually little need for external push or guidance in these explorations. If the students are given sufficient time and latitude, they will be impelled by their own curiosity to explore fundamental musical ideas framed by the conditions of the encounter. By remaining in touch with this student exploration, the teacher can determine the nature and focus of additional encounters. The following is an outline of a sample sequence of encounters (series) found in this study stated in terms of the objectives.

1. Free exploration -- to explore a wide variety of sounds on the electronic keyboard.

2. Free exploration -- to explore a variety of ways of treating sounds

with volume changes.

3. Guided exploration -- to focus attention on specific sounds and to relate these sounds to sound-producing techniques.

4. Free exploration -- to explore sounds of varying durations.

5. Guided exploration -- to focus exploration on the connotation of durations of sounds.

6. Exploratory improvisation -- to explore possibilities for combining sounds of varying lengths.

7. Planned improvisation -- to plan a short solo composition using sounds of varying durations.

In this sequence of encounters there is a heavy emphasis on the exploratory phases of the DPME. These early investigative experiences are often necessary in order for the pupils to gain basic sensitivity and to begin to think creatively.

At other times, it may be that a series will consist of one encounter in each of the phases. An example of such a series is outlined in the Guide for Developing a Series of Encounters. Following extensive exploration and improvisation in early series, such a progression of encounters through the phases may be very natural. However, when the series is employed in this way, it is assumed that the students have had many previous learning experiences which allowed for independent action and diversified responses. These experiences would be within a very broad framework in phases I, II, and III.

Concepts in Encounters

While the major emphasis of the Keyboard study is on the processes of musical behavior, basic concepts of music are not ignored. As the students' sensitivity to sound increases and simple skills are developed, fundamental ideas of musical organization are introduced through the encounters. These concepts are always identified through the students' personal experience and are considered in operational rather than theoretical terms. For example, in the previously described series, attention was drawn to concepts of duration by relating the duration of sounds to various ideas and objects. These generalizations of sound durations were then used in a compositional way and considered for their expressive possibilities. Only after a considerable amount of personal exploration and experience would note values and other strict applications of time be included in the framework of encounters. Concepts about pitch, timbre, dynamics, and form are treated in a like manner.

Within this keyboard study only inherent music concepts should be used. Those concepts which deal with specific idioms or styles should be avoided where possible. Harmony may be regarded as combined sounds, but need not be formalized as triads. The pulse can be introduced as an underlying force in music without getting hung up with measures and meters. Form can be considered as the basic plan or shape of a piece although strict period practices in form are not introduced.

For guidance in the introduction and sequencing of basic concepts, the first few cycles of the cycle structure of the MMCP Synthesis may be reviewed. In this concept structure musical ideas are presented in an open or non-restrictive way. The steps are consistent with the insights born from the natural explorations of the child.

One word of caution is necessary in considering the cycle structure in relationship to the Keyboard Lab. The sequence of concepts must not be regarded as a tight planbook type structure. The directions of the students' curiosity, their needs and interests which are born from their explorations must take precedence over any prescribed sequence.

Using Notation

As mentioned previously, the early encounters should not deal with formal notation, but rather focus all of the student's attention on the aural aspects of his musical experience. With the development of more concrete musical ideas, however, the students will soon discover that they need some sort of notation to help them to recall their explorations and the pieces they construct. The first steps in this need not be complicated or divert attention from the musical ideas. Notation can be any simple scheme which the student finds convenient. A picture, a diagram, words or sentences, or any kind of graphic design which he chooses to use may be entirely adequate.

The first steps in formal notation may be the f and p which may be included with his own devised notational system. As further specificity is needed, the one-line staff which allows for the distinction of three pitches will probably be helpful. Such a staff is illustrated in the Guide for Developing a Series of Encounters. Whatever the notational devices, the necessity for that device or symbol must first be apparent to the student from his own experience. Students can very swiftly become operationally secure with translative techniques when the only symbols introduced are those needed at a given stage of musical development. Such a plan allows the students to increase their aural sensitivity and creative musical insights without being saddled with overwhelming skill concerns. Their creative thought and musical judgments are not stifled by the imposition of extraneous theoretical and translative demands.

The Teacher in the Keyboard Lab

In the keyboard lab the role for the teacher parallels that described in the Synthesis. However, because of the kind of equipment used in the lab, the teacher has an exceptional opportunity to support and assist the students on a one-to-one basis. By using the console, she can work with individual students or with a small group of students at any time without either disturbing or neglecting others in the class.

Although this opportunity for personalized instruction can be a distinct advantage, it can also become a major drawback in the learning atmosphere of the lab. In the keyboard lab, as in all MMCP curricula, most of the activities call for personal experimentation by the students. They spend a good deal of their time creating and exploring musical ideas. Experience has shown that frequent teacher suggestions and other intrusions, even just unannounced listening to students, not only interrupts exploration, it often inhibits it. Students who expect the teacher to tune in at any moment do not feel free to extend their imagination. They are continuously aware of and cautious about what the teacher will like, and what the teacher won't like. They also often don't bother to think for themselves, because they soon learn that the teacher will come in with her own suggestions sooner or later.

The teacher must use the console with a great deal of care. Most of the time she should avoid double checking on students unless they ask for her help, or she should let them know that she intends to listen. This point should also be explained to the students. If they understand the teacher's role, they will feel free in their personal musical explorations, and know when to ask for help.

Guide for Developing A Series of Encounters

The following is a sample series which includes one encounter in each of the Developmental Phases of Musical Exploration (DPME). As previously stated, in actual lab operations there may often be more than one encounter in each phase. This series is intended simply as an explanation of the type of encounters that would be developed within a series and the breadth of experiences that must be included.

Phase 1. Free Exploration. Unrestricted pupil investigation of sounds, techniques, and musical ideas within a given framework.

> Example. Using the first three fingers of the right hand on any three successive white keys on the keyboard (i.e. C,D,E,), each pupil should experiment to find as many different patterns and combinations as he can. Keep the thumb or first finger on the first note, the second finger on the second note, and the third finger on the third note. (The teacher will assist the pupils with finger and hand positions as the need arises.)

Phase 2. Guided Exploration. Extended pupil investigation of sounds, techniques, and musical ideas within a more defined framework.

> Example. Using the first three fingers of the right hand on C, D, and E, each pupil should play as many different variations as he can find. He may experiment with the volume control in these variations.

Phase 3. Exploratory Improvisation. Pupil experimentation with personally identified patterns and sounds, in order to discover a variety of ways of creating musical thoughts for expressive purposes.

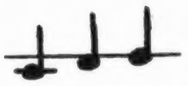
> Example. Each pupil should organize his musical ideas in order to find one arrangement which is musically satisfying. Using C, D, and E, any combination of notes may be repeated any number of times as

long as the fingering is maintained. (The teacher may assist pupils by giving them guidance when they need it.)

Phase 4. Planned Improvisation. Pupil organization of specific musical ideas in the form of a composition with or without notation.

Example. Using a few of the ideas they have already discovered, each pupil should plan a one-minute composition using three white keys (identified above) with the appropriate fingerings. Following adequate time for planning and rehearsal, pupils can perform compositions for each other on a volunteer basis. All compositions should be recorded for listening and discussion.

Phase 5. Reinforcement. Pupil attention focused on other exploratory and improvisational posiibilities which involve the same aural, dextrous, and translative skills.

Examples. 1) Introduce notation for C,D,E, on an abbreviated staff, i.e., . Pupils may then notate variations of these notes for others in the class to perform. (Time values should not be identified or notated at this stage.)

2) Focus attention to other musical possibilities of the three pitches by suggesting repetition of some sounds, a change in the length of some notes, contrasts in dynamics, etc.

3) Experiment with transpositions of pitches to other pitch areas of the keyboard and to other groupings of successive white notes in the same pitch area.

4) Notate an original composition (pitch only).

Note: Any three successive white keys, i.e. C,D,E, E,F,G, F,G,A, G,A,B, may be introduced initially. However, it is recommended that the strong fingers of each hand, i.e. one, two and three be employed when predetermined fingerings and references to finger and hand postures are made. This approach will allow the students to continue exercising their creative imaginations as well as progress with dextrous skills in a way that is compatible with their physical development.

Objectives for Encounters

In planning an encounter the teacher should consider the objective in very simple operational terms. The main reason for any encounter is the experience itself, so objectives should not be cluttered with a variety of cognitive, skill and attitudinal statements. The following is a sampling of the kinds of objectives which may underly encounters.

Phase 1. Free Exploration.

1. To freely explore a wide variety of sounds on the electronic keyboard.
2. To freely explore a variety of ways of treating sounds with

volume changes.
3. To freely explore sounds of varying durations.
4. To freely explore a variety of combined pitches.

Phase 2. Guided Exploration.
1. To focus attention on specific sounds and to relate these sounds to sound-producing techniques.
2. To focus exploration on the connotation of varying durations of sound.
3. To focus exploration on open-spaced chords (combined pitches) and various clusters.
4. To focus on the selection and performance of three sounds played in a variety of ways.

Phase 3. Exploratory Improvisation.
1. To identify three ways of developing musical ideas by combining sounds of varying durations.
2. To identify four different means of using repeated patterns.
3. To use and identify three different octave transpositions with ostinato patterns played on the black keys.
4. To use and identify four different improvisational schemes using black key ostinato patterns in a variety of keyboard pitch ranges.
5. To create four contrasting musical ideas, and to develop needed aural and dextrous skills, using the keys A,B,C,D,E.

Phase 4. Planned Improvisation.
1. To plan a short solo composition of approximately 30 seconds, using black keys in low, medium, and high pitch ranges.
2. To plan a short solo composition using three sounds of varying duration and varying volume.
3. To plan an improvisation using A,B,C,D,E playing some of the notes singly as well as in combination with other notes.

Phase 5. Reinforcement.
1. To introduce notation for A,B,C,D,E and focus on translative skills relating to these five notes.
2. To review notation for A,B,C,D,E and have pupils create and perform melodies in duets and trios.
3. To reinforce aural, dextrous, and translative skills by having students prepare and perform ounds using the notes A,B,C,D, and E. Some rounds may be notated, others may demand aural identification of sounds.
4. To compose a melody using A,B,C,D,E in the high or low pitch range of the keyboard.

SAMPLE ENCOUNTERS AND SERIES

Phase 1 - Free Exploration

Objective: To explore a wide variety of sounds on the electronic keyboard. (All sounds do not have to be produced in the traditional manner.)

Procedure: 1. Students can explore the possibilities for producing different sounds at the keyboard.

2. Allow an appropriate amount of time (five to ten minutes) for individual student exploration.

3. Invite individuals to perform two or three of the sounds for the class or a small group. Continue listening to their sounds until original ideas are exhausted and every volunteer has performed.

4. Class discussions can be focused with the following questions:
   Were any sounds alike? If so, how were they alike?
   Were any sounds very different? If so, how were they different?

   Students may discuss the differences and similarities in sounds through the operational techniques involved in performing them, by relating them to their personal experiences, by identifying acoustical characteristics, i.e. timbre, pitch, duration and volume, or in any other ways which are meaningful to them.

5. Students may pursue further explorations if time permits.

Note: The above plan assumes that the pupils have been introduced to the mechanics involved in turning on the keyboards and connecting and using headsets. All student free exploration at the keyboard should proceed with the use of headsets. For examples during discussions, the speakers should be used.

Phase 1 - Free Exploration

Objective: To explore a variety of ways of creating different sounds with volume changes.

Procedure: 1. Students should explore the possibilities for producing and varying sounds by using the volume control dial.

2. Allow five to ten minutes for personal exploration at the keyboard.

3. Invite pupils to perform two or three of their sounds which make use of variations in volume. Continue listening to their sounds until all volunteers have performed.

4. As a class or in small groups a list should be made identifying the various ways in which volume was used.

5. Students may explore other possibilities for producing sounds with volume changes.

Note: The above encounter assumes that the students have been shown the basic operational mechanics of the volume control mechanism on the instrument.

Phase 1 - Free Exploration

Objective: To explore sounds of varying durations.

Procedure: 1. Students should explore a wide variety of sounds varying in duration from very short to quite long.

2. Allow ten to fifteen minutes for personal exploration.

3. Invite students to perform some of their contrasting sounds. Ask them to describe the differences in duration using any reference they wish.

4. A discussion may be focused with the following questions:
   How many ways are there to describe the difference between the sounds of varying durations?
   Is there any other way to play a short sound? Students may realize one manner of releasing a key such as raising the entire arm. Further exploration may result in the discovery of other techniques, i.e. using the wrist with little or no arm motion, using the fingers for the action with little arm and wrist movements, etc.

Phase 1 - Free Exploration

Objective: To explore a variety of combined pitches at the keyboard.

Procedure: 1. Students should explore a variety of sounds created by playing a number of pitches simultaneously. They may experiment with any combination of two or more pitches in any range or arrangement.

2. Allow an appropriate amount of time for exploration.

3. Invite students to perform three of their most exciting combinations.

4. Focus attention on listening to the performed combinations of

pitches by asking the students to describe the differences and similarities of the combinations of pitches.

5. From new ideas developed when listening to performances, students should have time to pursue further explorations of combined pitches.

6. Other avenues of exploration, for instance, may involve the use of two hands or the playing of various combinations of pitches with one hand while producing other sounds on other parts of the instrument.

Phase 2 - Guided Exploration

Objective: To focus attention on specific sounds and to relate these sounds to sound-producing techniques.

Procedure: 1. Students should experiment to find two very different sounds on the keyboard instrument. A sound may be interpreted to be any single note or simultaneous combination of notes, as well as any other audible sounds produced on other parts of the instrument.

2. Allow about five minutes for personal exploration.

3. Individual students should perform their sounds and other members of the class will attempt to imitate the sounds.

Note: If the keyboard laboratory is set up to allow small groups of students to work together with headsets, it would be desirable to divide the class into groups of three or four for performance and imitations. If this feature is not available, all students should privately try their imitations until they have discovered a way to imitate the sound.

4. Discussions after each performance and imitation may center around the following questions:
   Was that an exact copy of sound?
   How was the sound made?
   How did you discover a way to imitate the sound?
   Can the sound or a similar sound be made in any other way?

Note: A few minutes of exploration will probably be needed before volunteers are ready to imitate any performed sound.

Phase 2 - Guided Exploration

Objective: To focus exploration on the implications of varying durations of sounds.

Procedure: 1. Students should be given two or three minutes of exploration time to investigate each of the following questions posed by the teacher. What kind of sounds can you find that remind you of a (an):

clock ticking
phone ringing
elephant walking
street drill
horse galloping
typewriter typing
machine-gun firing
factory whistle blowing
water dripping
alarm clock ringing
first grader skipping
ball bouncing

2. Volunteers can be invited to perform their sounds.

3. Discussion can be focused with the following sample questions which can be adapted for any of the descriptions above.
   Were any of the clock ticking sounds alike? Were they exactly or almost alike?
   Were any of the clock ticking sounds different? If so, how were they different? Were some clocks faster? slower?
   Were any of the phone ringing sounds alike? Do all phones sound alike?
   Were any of the phone ringing sounds quite different? How would it sound if you picked up the phone receiver shortly after it began to ring?

Note: The following idea may be considered in addition to the above encounter. Using a time measuring device, such as a metronome, wall clock, egg timer, cooking range timer, stop watch, etc., students can measure the length of the above sounds performed by them. It may also be interesting to note how many times any sound, maintaining the original form and character, can be performed in five seconds, ten seconds, fifteen seconds, etc. If a tape recorder is used, students can perceive the duration of their sounds in terms of tape length or the measurement of the tape counter.

Phase 2 - Guided Exploration

Objective: To explore spaced chords (combined pitch groups where the notes are not next to each other) and various clusters.

Procedure: 1. The first (thumb)and second fingers will work together as two friends. When they walk along the keyboard they will play notes side by side. Take your first and second fingers for a walk and hunt for sounds they can make playing together.

2. Along came a classmate, finger number three, to join fingers one and two. The third finger will play another note. Now all three will play together. Is there any difference in the sounds?

3. Perhaps the three fingers will pick up another friend who will

also play. Find as many close sounds as you can.

4. Following an appropriate amount of time for exploration, the class may listen to the sounds volunteered by students. Performances and listening may be concerned with the following:
   Can someone play some two-finger sounds? Are there any different two-finger sounds?
   Did anyone find a fourth friend for four-finger sounds? five-finger sounds?
   Did anyone find six-finger sounds? How did you play six-finger sounds?

5. Suppose your friends had to go away and could no longer play side by side -- could they play at the same time even though they were further apart? What kind of sounds would you get with spaces between your fingers and hands?

6. Allow time for exploration

7. Listen to sounds volunteered by students.

8. In discussions, have students describe the differences between the sounds of the spaced chords and the sounds of the clusters.

Note: A tone cluster is three or more adjacent pitches played simultaneously.

Phase 2 - Guided Exploration

Objective: To select and perform three sounds which will be repeated many times.

Procedure: 1. Students should experiment to select three sounds which they can play over and over again in the same manner.

2. Allow an appropriate amount of time for the selection of sounds and rehearsals of repetitions.

3. As a class, or in small groups, listen to the various ostinati performed by individual students.

4. Discussion can be focused with the following questions:
   Were any of the sound patterns difficult to repeat in the same manner? Why?
   If some of the sound patterns were difficult to repeat, can anyone suggest an easier way of playing them?
   What two patterns do you think would sound good together?

5. Experiment with combinations of sound patterns as suggested by the students.

6. Tape combined performances of sound patterns for immediate playback and discussion.

7. If time permits, allow additional time for exploration and rehearsals of repeated sound patterns.

Phase 3 - Exploratory Improvisation

Objective: To explore possibilities for developing musical ideas by combining sounds of varying characteristics.

Procedure: 1. Some of the ideas investigated under guided exploration such as the clock ticking, the phone ringing, the elephant walking, the machine gun firing, etc., could be set up as a sound metaphor machine as a way of generating ideas for improvisation. The following is an example of how the sound machine could be set up.

SOUND MACHINE

A		B		C	
1	clock ticking	1	phone ringing	1	horse galloping
2	street drill	2	elephant walking	2	first grader skipping
3	gun firing	3	whistle blowing	3	water dripping

2. Sounds of varying lengths and rhythmic patterns can be combined by making a number selection in each of the lettered A, B, or C columns, i.e. A1 sounds followed by B2 sounds followed by C1 sounds.

3. Experiment with various combinations as suggested by members of the class. No two combinations will sound alike if students maintain their individual interpretations of the ideas appearing in each of the columns.

4. Following a brief period of experimentation by the entire class, in order to orient the students to the sound machine, students may experiment individually.

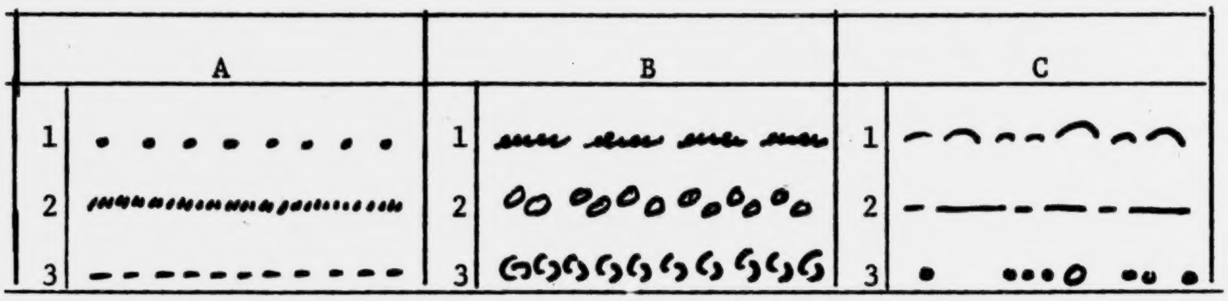
5. After about 10 minutes of personal experimentation, students may volunteer to play their improvisations based on their work with the sound machine.

6. All performances should be taped for reference and comments.

7. In a discussion, the teacher may ask:
    Could you hear the sounds or patterns changing?

How could we keep a Column A sound going and still go on to Columns B and C?

Note: A similar encounter can be used with the above procedures and following revision. Instead of using word descriptions of the sounds, students can devise their own notational symbols to be inserted in the sound machine, An example of devised notation, to represent the sounds described in the above example, is illustrated as a reference.



Phase 3 - Exploratory Improvisation

Objective: To explore a variety of ways of combining repeated patterns.

Procedure: 1. The class should experiment to construct a sound machine using selected groupings of the repeated patterns developed in the last learning experience.

2. Either the teacher or student volunteers may try sounds for the sound machine by conducting some members of the class in an improvisation.

3. Tape two or three of the improvisations for playback and discussion.

4. After two or three improvisations listen to the tape and compare the differences and similarities.
   Were they different? If so, how were they different?
   Were they similar in any way? If so, how were they similar?
   What parts of the machine could these sounds represent?

5. When appropriate, extend the discussion with the following:
   Were the conductors satisfied with their results? If not, discuss how better results might be achieved. Students should lead the discussion as much as possible.
   How can conductors successfully control entrances and exits of groups or individual performers? (Student conductors may have to establish simple gestures for starting and stopping.)

6. Experiment with any ideas or suggestions that evolve from

discussions.

7. The following questions may be considered to further stimulate thought and experimentation:
   What would happen if -
      all keyboards were not played at the same time?
      all keyboards were silent some of the time?
      the sound machine slowly broke down rather than suddenly stopped?
      we had two sound machines, a big one and a little one?

8. Invite students to devise their own sound machines and perform them as solos, duets, trios or quartets.

Phase 3 - Exploratory Improvisation

Objective: To explore octave transposition with ostinato patterns played on black keys.

Procedure: 1. Experiment and select a pattern of notes on the black keys which you can play over and over again.

2. As a class, or in small groups, listen to the various ostinati performed by individual students.

3. Discussion can be focused with the following questions:
   Which patterns differed the most?
   How were they different?

4. Experiment with various combinations of sound patterns as they are suggested by the students.

5. Students should investigate the differences when they can play their patterns at another pitch area of the keyboard.

6. As a class, or in small groups, combine a number of transposed patterns and compare them to the original versions.

7. Ask students to select one of the versions for a large group improvisation.

8. Tape the improvisations for immediate playback and discussion.

Phase 3 - Exploratory Improvisation

Objective: To experiment with different improvisational schemes using black key ostinato patterns in a variety of keyboard pitch ranges.

Procedure: 1. Using any portion of the keyboard, pupils develop a five-note ostinato pattern on black keys.

2. Listen to the ostinato patterns and have the class or members of a group determine in which pitch range (low, medium, or high) each ostinato belongs.

3. Divide the class into groups so that each group of four or five students is represented by a broad spectrum of keyboard (pitch) ranges. Or, divide the class into three groups each representing one of three pitch ranges (low, medium, or high).

Note: Preferably the class will work in groups of four or five with each member of a group having an opportunity to shape an improvisation. If this is not a workable plan, the alternative of dividing the class into three large groups (low, medium and high pitch range groups) can be used with volunteer conductors to shape improvisations.

4. Attention in the exploratory improvisations should be focused on achieving contrasts by using the three ranges singly and in combination.

5. Allow an appropriate amount of time for students to work out and rehearse improvisations.

6. Tape all improvisations for immediate playback and analysis.

7. Discussion deals with the immediate concerns of the students. The following questions may be considered for further analysis:
   What did you like best about this improvisation?
   Is there anything you would change if you were to do it again?
   How is it similar to the last one we heard?
   How is it different from the last one we heard?

Phase 3 - Exploratory Improvisation

Objective: To explore musical ideas and develop aural and dextrous skills using the keys A,B,C,D, and E.

Procedure: 1. Students should explore different patterns on A,B,C,D, and E using the first three fingers of each hand and keeping the thumb or first finger of each hand on C.

2. Students should privately experiment with the keys and the related fingerings. The teacher should assist as help is needed.

3. During the period of personal exploration, suggest the following improvisatory ideas at about five-minute intervals:
   Improvise a short piece playing each of the keys (identified above) one at a time (in linear fashion). Order of notes, repetitions, durational values, etc., may be determined by the

students. However, the related fingerings should be maintained.
Using the related fingerings, improvise a short piece playing combinations of two keys at a time.
Using related fingerings, improvise a short piece playing combinations of three keys at a time.

3. Invite volunteers to play any one of their improvisations for the class.

4. Record and play back improvisations.

Note: An encounter using three successive white keys as described in the Guide for Developing A Series of Encounters should precede the above.

Phase 4 - Planned Improvisation

Objective: To plan a short solo composition using black keys in low, medium, and high pitch ranges.

Procedure: 1. Each student should plan a composition which will be performed for the teacher and other members of the class. The compositions should make use of both single and combined sounds.

2. As they are completed, the compositions can be performed for the teacher and other members of the class who are finished or wish to get ideas. This will allow students to work at individual rates of speed.

3. All compositions should be taped for immediate playback.

4. Upon completion of individual performances and playback of tape students should be encouraged to evaluate their own work. The following considerations may serve as a framework for personal evaluations of compositions as well as serve as suggestions for possible revisions. Remember that at times no discussion may be advisable.

5. The following questions may be considered:
   Did any two pitch ranges occur at the same time? How were two different ranges played at the same time?
   Were any patterns repeated in the composition?
   Did the composition become dull because of too much repetition? Could repetitions of sounds or patterns be broken by occasional surprise sounds, sounds that are very different?

Phase 4 - Planned Improvisation

Objective: To plan a short solo composition using sounds of varying durations.

Procedure: 1. Each student may plan a composition of from 30 seconds to one minute. It should have a title which suggests two contrasting rhythmical natures, such as "The Tortoise and the Hare".

2. A short discussion reviewing the nature of movements of the two animals, e.g. the tortoise being slow-moving and relaxed, as opposed to the hare which moves abruptly, nervously and somewhat jaggedly, should precede compositional work. It may be desirable to have volunteer students improvise demonstrations of the characteristics discussed.

3. Allow approximately fifteen minutes for planning and rehearsal. During this time the teacher can serve as a resource person and a guide as student needs dictate.

4. As they are completed, the compositions can be performed for the teacher and other members of the class who are available for listening.

5. All compositions should be taped for playback after all compositions are finished.

6. Upon completion of individual performances and playback of tape students should be encouraged to evaluate their own work. The following considerations may serve as a framework for the discussion of compositions, as well as serve as suggestions for possible revisions:
   How would your composition sound if you played it faster? slower?
   Were sound considerations besides duration used to describe the different characters?
   How would your composition change if you had silence every so often?

Note: If a race between the tortoise and the hare was implied in the discussion before beginning the composition, the following questions may be appropriate:
How would your composition sound if the hare won the race? the tortoise won the race?
How would your music end if the race ended in a tie?

Phase 4 - Planned Improvisation

Objective: To plan an improvisation using A,B,C,D, and E playing some of the notes alone, or singly, as well as in combination with other notes.

Procedure: 1. Review the keys and the related fingerings.

2. The students should have about ten minutes to individually plan and rehearse a 15-second improvisation that utilizes some of the notes played singly and some chords or clusters. The improvisations will be taped.

3. At the end of the planning and rehearsal time all students should perform their improvisations which will be taped.

4. Students should listen to the tape and decide which improvisations could be combined consecutively and/or simultaneously to create an exciting composition.

5. Students should have an opportunity to practice together and play their combined pieces for the class. These should be taped for playback.

6. Discussion may be concerned with:
   Were the combinations of improvisations effective? Did they sound the way you imagined they would?
   What other combinations would have been effective?
   What made the pieces effective?

Phase 5 - Reinforcement

Objective: To compose a round melody and ostinato using A,B,C,D, and E in the high and low pitch range of the keyboard.

Procedure: 1. Three students should work together to compose a melody on the upper or lower pitch range of the keyboard, to be played as a round, and an ostinato which will go with the round.

2. Allow an appropriate amount of time for composition and rehearsal. Students should devise some notational plan so that they can play their compositions for the class.

3. Listen to the melodies volunteered by the students.

4. Invite suggestions from other students on ways to improve the compositions. In these discussions consider whether a percussion instrument would add to the piece.

5. Allow time for students to revise their compositions if they wish to do so, and tape final performances.

6. In discussions consider:
   Was there a good balance in volume levels between parts?
   What effect did the ostinato have on the "round" melody"?

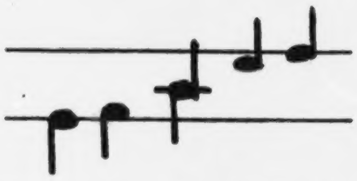
How would the round sound without the ostinato?
How would a different timbre setting on the instrument affect the balance or total sound?

Phase 5 - Reinforcement

Objective: To introduce notation for A,B,C,D, and E and develop translative skills relating to the five notes.

Procedure: 1. Review the keys A,B,C,D, and E using the first three fingers of each hand and introduce the notation on an abbreviated staff.

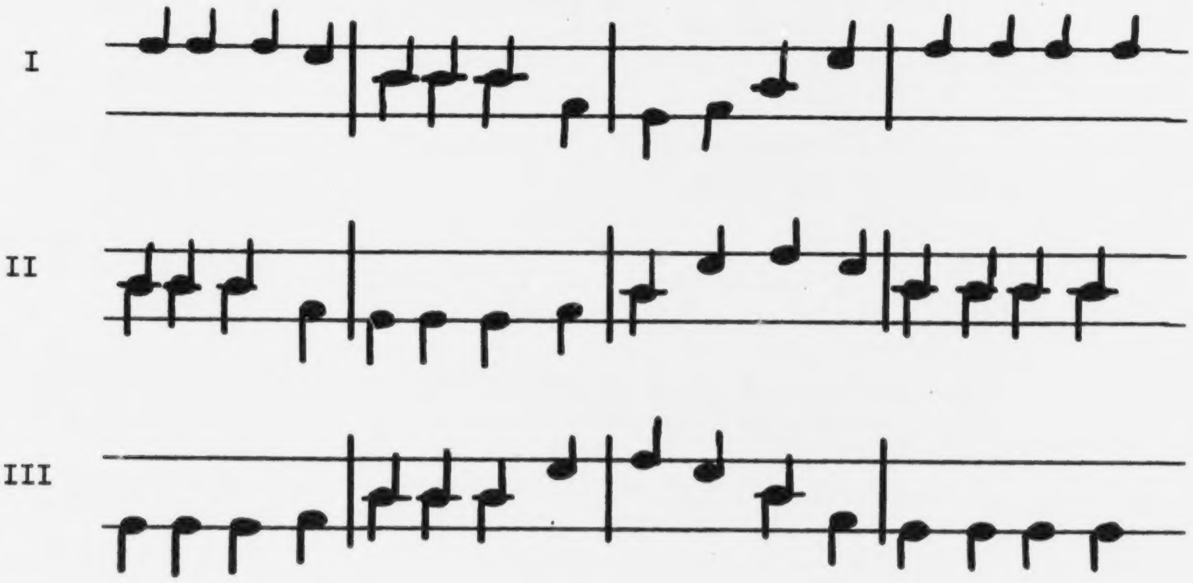
Example:



2. Using the chalkboard or an overhead projector, indicate the notation to the students. Focus discussion with the following questions:
   Why do you think we have some stems going up and some stems going down?
   Why do we have two stems on the note C, one going up and one going down?

Note: If students have difficulty identifying a reason, ask them to assume the fingering position for clues.

3. Students should assume the fingering position for the above and play the key indicated by the teacher pointing to the note on the chalkboard or overhead projection. The following examples may be used for reading:



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4. Practice the above examples with the students, reminding them occasionally to maintain the related fingering positions. Students should work through headsets the first and second times and then through speakers. If any student prefers to work with headsets all of the time, he should have the option to do so.

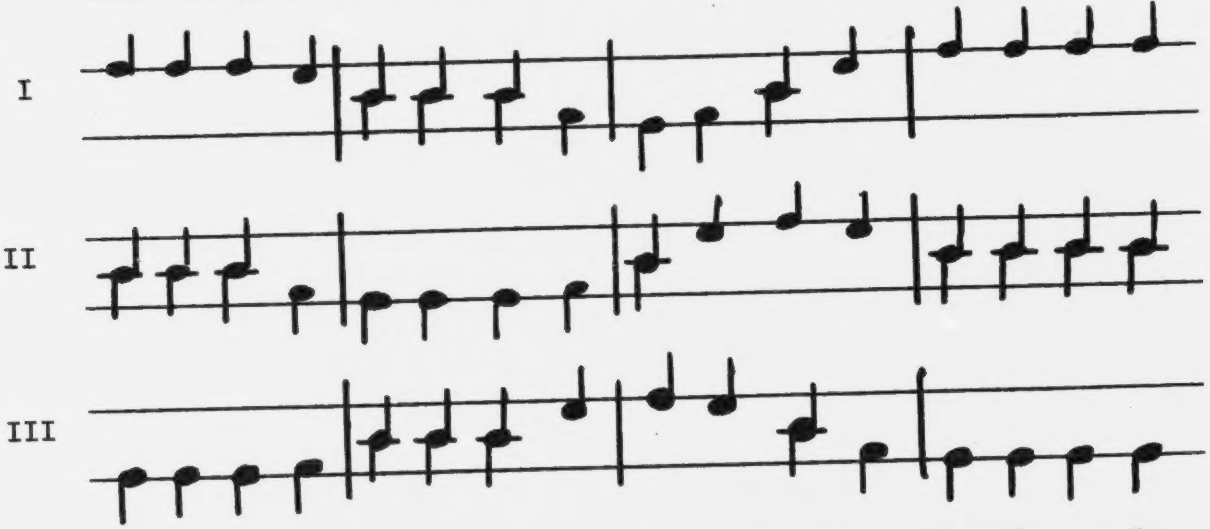
5. Provide time for students to work individually on the three melodies using headsets.

6. Divide the class into three groups and practice playing the three melodies at the same time.

Phase 5 - Reinforcement

Objective: To develop aural, dextrous, and translative skills using the keys A,B,C,D, and E, and to introduce the students to the performance of rounds.

Procedure: 1. Review the melodies individually using headsets. If the chalkboard or an overhead project is used, the teacher or a student can point to the notes as the class plays.



2. Invite individuals to play any one of the lines for other members of the class to identify.

3. Students may practice playing the three melodies without stopping in between, i.e. begin with the first measure of melody I and end with the last measure of melody III.

4. Select two volunteers to play one melody as a round. Gradually add other students to each part.

Note: If the keyboards are set up to accommodate small group work through headsets, students can work in groups of four with two on a part.

5. Divide the class into three sections to perform all three melodies as a round. The following procedures may be considered for performance and comparison:
   - Group A would begin and continue playing until they reach the last measure of line III. Group B would begin line I as group A begins line II. Group C would begin line I as group B begins line II.
   - Each group could try their entrance at one measure intervals, two measure intervals, three measure intervals, etc.

Note: The teacher can assist the performance by preparing the students for entrances. Alternate the order of group entrances so that each group has the opportunity to enter first, second, and third.

6. Tape all versions of the round for listening, and compare the differences. Some of the following may be used to focus discussion:

   Which version did you enjoy the most? Why?
   What is the difference in sound between the round played at four measure intervals and the round played at one measure intervals?

Note: The above plan may extend for two or three class meetings. The teacher should not hesitate to recommend suggestions for improving fingering, hand positions and general posture. This can be done on an individual basis as the need arises.

Phase 5 - Reinforcement

Objective: To review notation for A,B,C,D, and E and experiment with the composition and performance of rounds.

Procedure: 1. Each student should compose a melody at the keyboard. It should be of approximately 20-note duration. The pitches to be used are A,B,C,D,E. After the student is satisfied with the sound of his melody, he should notate it very carefully on an abbreviated staff.

2. In groups of three, the students should practice one another's melodies so that they are able to perform any one of the melodies in unison. It is recommended that the members of each group assist each other in accomplishing this.

3. The group should experiment with one of the melodies as a round. When should the second voice and the third voice enter? Should one part be in a higher or lower pitch area (still using A,B,C,D, E, of course)? Should the timbre be changed for the voices? This experimentation and rehearsal may take considerable time, probably more than one class period.

4. As each group is ready to perform one of the pieces, they should

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notify the teacher and have that piece tape recorded. Then they should proceed with the preparation of the second piece, tape it and move to the third.

5. After a few pieces have been recorded, it would be good to interrupt the group activities to have the whole class analyze and critique the pieces which have been recorded.
   What are the differences in the pieces?
   What seems to work well in rounds?
   How do octave displacement or timbre differences affect the pieces?

Additional Ideas for Developing Series of Encounters

Exploration, improvisation, and composition using musical ideas which deal with:

1. fingering patterns, i.e. first and second fingers, first and third fingers, etc.
2. selected intervals, i.e. seconds and thirds, seconds and fifths, etc.
3. phrasing, i.e. two-note phrases, several-note phrases, two-measure phrases, five-measure phrases, etc.
4. cluster chords of various numbers of pitches.
5. open and closed harmonies.
6. synthetic, diatonic, pentatonic, whole-tone, chromatic, etc. scales.
7. motive development using prescribed numbers of pitches.
8. selected listening examples heard from recordings, live concerts, television, film, etc.
9. various rhythmic schemes.
10. embellishments.

APPENDIX E

MMCP

SCIENCE-MUSIC STUDY

Ronald Thomas

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Preface

by
James Tenney

The development of the tape recorder and other electronic devices for the generation, modification and recording of sounds has created a radically new situation in music, affecting not only the composer and listener, but the student and teacher as well. The variety of sounds now available to the composer as the raw material for his work and the variety of sounds the listener is expected to appreciate are no longer limited to the set of conventional instruments as in the traditional symphony orchestra. Any and all sounds become potential musical materials. In addition, the composer (and listener) is no longer subject to the natural and cultural limitations of a human performer with respect to rhythmic articulation, pitch precision, etc. In short, music has changed, and music education needs to keep pace with these changes if a student's classroom experiences are to be relevant to current musical practice.

The procedures worked out in the Manhattanville Music Curriculum Program are designed to ensure this relevance to contemporary music but, in addition there are a number of other benefits that may be expected to be gained by the students working in the program.

One of these is a familiarity with some aspects of modern technology, a sense that electronic devices are potentially useful tools even in creative work in the arts rather than mysterious and perhaps threatening "black boxes".

Another is a deeper understanding of the physical nature of sound and an integration of this objective, scientific understanding, with the more subjective, musical understanding of sound.

A third is a heightened awareness of the sounds in the environment, including but no longer restricted to the sounds of conventional musical instruments.

We live in a time of rapid transformations in all fields of human activity, and one of the signs of such transformation is that the old boundaries between separate fields and specialized disciplines are breaking down or dissolving, not only within the sciences and within the arts, but now even between the arts and the sciences. The age of limited specialization is over and the sooner this is reflected in educational curricula, the more able will our students be to confront the complexities and challenges of modern life in terms of present realities.

FEASIBILITY STUDY IN SCIENCE-MUSIC

During the 1969-70 school year, the MMCP will conduct an experimental study which will involve children in the compositional processes of electronic music. This learning program incorporates exploration in areas of science and technology as well as music. Therefore, it is not only a music program, it is a science-music program. The following materials outline the initial stages of experimental operation for this dual study.

It is important to remember that this program was designed as an experiment to assess the potentials, appropriate learning time, educational processes, duration, substance and learning benefits of such a study. From the experiences gained in the experimental classrooms, decisions will be made regarding the form and extent of this type of activity in the total curriculum. There are many questions to be answered. Should this be the principal emphasis at a particular grade level? Are the benefits to the child rich enough to warrant extending, broadening, or intensifying the experimental work? Should the program be divided with elements of it incorporated in varying cycles of the MMCP Synthesis curriculum? Such questions can only be answered after the students at various levels have expressed themselves through their involvement in the compound study. Their achievements and the conclusions of the teachers will largely determine the place, the time and the extent of such a program.

Why An Elementary Electronic Music Laboratory

The major goal of the MMCP is to prepare a broad program of learning wherein each student will gain insight into the basic nature and language of music and develop his potential for continued involvement in this unique medium of expression.

In the pursuit of this goal there are many factors to be considered. One is artistic relevance: will the student's classroom experience deal with real musical factors and assure insight into the basic character of the art? Environmental relevance is another: does the study have relevance to the real world that the student knows and responds to today? Still another form of relevance is concerned with the process of involvement, the personal relevance. Do the educational strategies and processes have intrinsic meaning to the student? Is there a reason for him to choose to involve himself on a personal basis?

Other curricular concerns are expressed as objectives in the areas of attitudes, conceptual understanding, skill development, and aesthetic judgment. How the student regards music for himself, his spirit of inquiry, the knowledge he gains and uses, the operational skills he develops, and his capacity for judgment making are all of vital importance if the student is to gain a significant frame of reference. Certainly the total curriculum and every phase of it must be assessed in each of these four areas of objectives.

With the substance of the curriculum chosen on such criteria, it is

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only natural that MMCP should be concerned with electronic music. It certainly meets the demands for relevance. Electronic music is a product of today's technology, and the nature of the music reflects our contemporary society. It is relevant in another way. The sounds are fashioned and shaped by and through electronic equipment which is, if not familiar, exciting and pertinent. It is needless to say that the musical concerns are relevant. The inherent concepts of form, timbre, dynamics, time and pitch which underly all music are certainly evident here. In fact, in electronic music the control of these factors is so tangible their interaction and musical significance are easily recognized. There is great possibility for creative discovery.

In the area of attitudes, the inclusion of electronic music in the curriculum has a special advantage. It is a musical medium which is new and fresh and cannot be used merely to serve familiar idiomatic practices. Involvement in this medium has to stretch imaginations and offer new musical horizons. Such experience should assure that no student will develop a narrow or restrictive view of music. He should sense the breadth of expressive means and creative invention which is one of the strongest characteristics of music.

This compositional activity should also serve to stimulate the student's spirit of inquiry. He does not have to subscribe to preconceived notions of right and wrong with electronic sounds. He can experiment in this idiom with more freedom than he will allow himself in idioms of a more traditional nature. Such freedom of experimentation may be significant in developing attitudes of intrinsic power, of personal confidence in becoming involved.

The activity in the electronic music laboratory has another very significant advantage. Experience has shown that the student's cognitive development, his ability to understand, think, and make creative judgments in music, grows at a much faster rate than his abilities in dextrous and translative skills. Often his inability to meet the performance or notational demands of his own creative insights causes the student to be frustrated or discouraged. In the electronic music lab the skill requirements are completely different and far less formidable. Notation need only be a plan devised in his own style, and the performance is at least largely a process for the tape machine. Where in all other areas of the early curriculum the quality of sound production in performance is somewhat less than the professional standards he hears over media, the sounds he produces in the electronic lab can be of the highest professional quality. His raw materials for creative musical use are authentic and of the highest standards.

Of particular importance is the learning advantage of concept reinforcement inherent in the electronic lab experience. With the equipment and materials available for compositional use, the student uses his visual and tactile senses to clarify and reinforce aural concepts. The measurement of tape bears on time concepts. Form and polyphonic texture can be manipulated kinesthetically. The oscilloscope brings a deeper meaning to timbre and pitch. In all phases of the lab experience, the eyes and fingers are used, not in abstract translative or dextrous ways, but in direct relationship to the aural concept and judgment.

Why a Science-Music Program

Music education, like most subjects in the elementary and junior high school, is generally an isolated pocket in the school day. There have been some attempts to integrate with other subject matter, particularly other cultural areas, but these programs have largely relied on peripheral relationships and an extrinsic approach to the art. The majority of these hybrid studies have evolved from the crises of time in the schoolday, lack of student interest or demands for correlation rather than from an analysis of the positive educational values found in crossing subject matter barriers.

The decision to construct this experimental program as a dual science-music laboratory stems from a recognition of the parallel and highly related factors that could strengthen desired outcomes in both subject areas. These include the following summarized points:

1. Today's science programs for the elementary grades place a heavy emphasis on the process of inquiry. The student is encouraged to question and experiment. Inductive, deductive and intuitive reasoning are employed in problem solving. The learning processes advocated by the MMCP are identical with those of the new science programs. The spirit and process of inquiry, the enthusiasm for discovery, the concern for exploration, and the confidence to make judgments are personal attitudes which are fostered and utilized. The educational process and the attitudinal goals of both the music and the science programs are very closely aligned.

2. One cannot consider an electronic music laboratory without thinking of sound generators, filters, amplifiers, oscilloscopes, and other pieces of electronic equipment. If the learning program is to be more than superficial, it is essential that the student become aware of the nature and function of these items as well as the end products which they produce. While much of this will be more related to technology than to science, there are many areas where an investigation of science concepts is not only pertinent but vital if the child's spirit of inquiry is to be cultivated. An understanding of how and why things occur is far more stimulating and exciting than merely controlling a mysterious black box. Since the laboratory naturally functions with science tools to create musical ideas, insight into concepts and discovery processes in one area complements insight and interest in the other area.

3. Too often children consider both music education and science education to be subject areas which have little to do with real life. They are studies in school which are interesting but are not related to personal problems or intrinsic concerns. "I have to know it, but I don't know why." It is felt that this exploratory program can have great significance in helping the child to discover that music is not alien to his world. It is a means of expressing real things in life that are felt and cared about. Similarly, science has relevance because it deals with the process of exploring and creating

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things that are important. With the view that science is a mode of inquiry and music is a way of knowing, the child should find greater significance in both areas.

Objectives and Assessment

The objectives for conducting this experiment are as follows:

1. to gain evidence relative to the attitudinal, cognitive and aesthetic effects of this program on the child; in fact, to clarify the statements regarding the relevance of this unique laboratory program.
2. to study processes for classroom action at various grade levels and test a variety of classroom strategies and procedures.
3. to develop specific educational objectives for this program based on the responses, interests, and achievements of the students and evidence of their potentials.
4. to develop a practical and meaningful substance for this program which is significant and intellectually responsible and challenging.
5. to ascertain the optimum place and time for this study within the total curriculum.
6. to gain insight into the nature of compatible factors between educational fields and processes which could be utilized in developing significant and less constrictive learning programs.

Information about these objectives will be obtained in two ways. In meetings and through questionnaires the teachers who are working in the classroom will express their opinions regarding their own work and the achievements and problems of the students. Observers in the school systems and from MMCP will also empirically evaluate the work in progress.

Operational Guidelines

While considerable planning must precede the implementation of any experimental education program, MMCP has found that a curriculum cannot be built in an office or at a planning conference. At best, conferences can produce only preliminary guidelines, basic ideas, and practical resources. An effective curriculum is the product of classroom trial and the interaction of teachers and students, students and ideas, and teachers and experts. All three levels of interaction are imperative. Within this framework these operational guidelines should be considered as suggestions based on experience in related but not identical situations. Those working with this science-music program should regard this section and the strategy section as recommendations for procedure to be handled in a flexible way.

Classroom Environment. The class should be operated in a laboratory manner. The students should have considerable freedom in their creative work within teacher devised or approved strategies. The students will need to discuss their ideas with one another, and when composing or experimenting in teams, work comparatively independently of the teacher and the rest of the class.

Each classroom should have three laboratory stations with basic equipment. It should also have three or four planning stations where students can prepare the ideas they will then develop in the laboratory stations. A separate listening station should be set up where reference recordings can constantly be used. From time to time it will be necessary to have a demonstration area where pertinent ideas can be introduced to the whole class by the teacher, a student, or a guest. It is recommended that each class invite science and music guests periodically to associate with the class.

Obviously the classroom will not look like a standard classroom. The requirements of normal operation necessitate a special organization of space and facilities. While a more thorough description of practical arrangements must await classroom experimentation, two principles should be observed.

1. Stations for planning, composing, and listening should be well defined at the outset. Each student should know where he is to work and gain the experience of containing himself to his group and assigned station.

2. Since there are three composing stations for 5 to 7 groups, it will be necessary to establish time allotments so all students will have adequate opportunities for listening, composing and planning.

The Teacher's Role. In general the teachers involved with the lab should operate within the same framework advocated for all other areas of the MMCP curricular studies. A complete description of this is found in the Synthesis. Since two subject areas are involved, a number of different arrangements are being tested in the experimental programs. These include team teaching by science and music specialists, responsibility given to a gifted classroom teacher with science and music specialists serving as resource people, and responsibility assumed by either the science or music specialist with the other serving as a resource person. Each of these plans will be studied.

Curricular Plans and Initial Objectives

As stated previously the educational objectives of this program will be largely determined through the experimentation. There are, however, basic principles which will support and give direction to the program at the experimental stage.

This educational experience is not intended to force-feed facts. Rather, the atmosphere should be discovery-oriented. The experience of being involved in the discovery processes, of exercising inductive, deductive, and intuitive reasoning powers, and developing sensitivity to the nature of musical sounds and the interaction of these sounds is much more important than assimilating a repertoire of facts, formulae, or specific conceptual items. There will certainly be many basic

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concepts, both musical and scientific, which will be dealt with in due course, but at this time there is not any conceptual sequence or structure which is considered imperative. A reference for basic musical concepts can be found in the cycle structure and where apropros, this may be used. Resource persons in science can offer advice relative to appropriate concepts in the science field.

It is more important, however, for those involved at the early stages of this program to be totally conscious of the child's sense of inquiry and the direction and extent of his curiosity. Decisions of scope and sequence will be made largely on the evidence of the student's interests, enthusiasm and accomplishment in those areas he considers personally challenging.

Should the concerns of the students at any stage suggest a temporary departure from either music or science, the teacher should feel free to move in that direction. The program may be thought of as a tree with the trunk an electronic music laboratory concerned with both science and music. The branches on both left and right are necessary lines of investigation into either area stemming from the trunk and complementing it but having their own short independent direction.

SAMPLE STRATEGIES

Strategy 1

The purpose of this strategy is to introduce the mechanics of recording on the tape machine and to create an awareness of and an excitement for sounds.

Step 1 **The teacher demonstrates the methods for threading tape through the tape heads, for starting and stopping the machine, and for recording. The function and position of the pause control lever and the microphone input jack are also explained and demonstrated.**

Step 2 Each youngster selects an object on his person or in the room which he wishes to record. The recording may be done with contact mikes as well as regular microphones. Another student operates the machine.

Step 3 After four or five demonstrations for the whole class, with the teacher assisting but not being overbearing, the students proceed with their experimentation at the lab stations. Each student should have the opportunity to record his sound and to operate the machine.

Step 4 All sounds are played back in a continuous fashion for the interest and amusement of the class. Comments about unique sounds or comical happenstances are fine. Inquiry among students about the sounds is to be encouraged.

Suggestions. While it is certainly not desirable to introduce technical descriptions of the underlying principles or mechanics at this early stage of the course, no question which arises from the students' own sense of inquiry should be pushed aside. Often a simple experiment can be devised which will allow a student or a small group of students to find their own answer. If the question stems from a large segment of the class, it would probably be most appropriate to devise a large class strategy which deals directly with the problem. The most appropriate time to find any answer in the classroom is when the students have found the question.

Strategy 2

The purposes are to promote sensitivity to differences in sounds and an understanding of the simple uses of the tape recorder.

Step 1 The class is divided into groups of four or five students. Each group finds three interesting environmental sounds of five to ten seconds in length which they then record on separate lengths of tape. The sounds used should be those that exist naturally, not those purposely devised by the students. Examples of appropriate sounds are bird sounds, the sound of an automobile, hissing steam, the drip of water, sounds in the school corridor, the water fountain, a telephone busy signal, etc.

Step 2 Each group experiments with its three chosen sounds, exploring the various ways they can be altered by using the volume, tone, and speed controls of the recorder.

Step 3 Each group presents the three sounds to the class in two versions: as originally recorded and as altered. Class discussions of what happened to the sound from both technical and aural points of view are desirable at this time.

Step 4 Each group records its desired altered sounds on separate lengths of tape so that they can be played without continuous manipulation of the machine.

Step 5 Each group considers how the parts of the six pieces of tape containing both the original and the altered sounds can be sequenced to create an interesting piece. (Would some sounds be repeated? Would some be discarded? Should some or one reoccur at certain time intervals?)

Step 6 When decisions about the sequence of sounds are reached, each group records its preferred sequence on one tape by using patch cords between two machines and controlling the taping of the final version with the pause control lever and the manipulation of the tone and volume controls.

Step 7 Each complete piece is played for the class and critically discussed. Discussions should be directed toward new or different ideas that could be used, whether the piece has any discernible plan, whether the uses of the sounds are imaginative, etc. Programmatic references should be avoided whenever avoidance is not forced or awkward.

Suggestions. a) Student-owned battery operated tape recorders may be practical for original recordings of desired sounds.

b) No attempt need be made to prepare a score, but if a score is prepared, it should be used in discussions. A transparency will allow the whole class to see the score.

c) Groups should be selected by the teacher to assure some balance in student creativity, technical knowledge, thoroughness, aggressiveness, etc.

d) All small lengths of tape (approximately 75 inches for a ten-second recording @ 7 1/2 i.p.s.) should have at least 20 inches of paper leader tape attached which will later be marked to identify the group and the particular sound, i.e. Group IV Bird sound -- altered by reducing speed.

Strategy 3

The purposes are to introduce the concept of two or more sounds occurring simultaneously and the nature and use of a tape loop.

Step 1 The teacher prepares identical tape loops of approximately five seconds (37 1/2" @ 7 1/2 i.p.s.) duration for each group in the class. One suggestion for a sound source for the loop would be the inside of a piano played by stroking the fingers in a circular motion over a large number of strings while the sustaining pedal is depressed.

Step 2 The teacher plays the tape loop for the entire class and encourages a discussion of other sounds that could possibly go with the tape loop. Should something else always play? Should the dynamic level of the continuous loop be altered? What kinds of sounds could be used imaginatively? etc.

Step 3 Each group selects one appropriate sound source on which a variety of sounds can be produced. These sounds should be those that can be effectively used to create a piece with the loop. For example, a can may be hit in many different ways with different strikers, it can be scratched, stroked with a screw driver, crumpled, or rolled. This calls for a good deal of experimentation.

Step 4 Sounds selected as desirable for use are recorded on separate lengths of tape and marked for identification by each group. No limit is set on the number of recorded sounds.

Step 5 A plan for the overall piece is devised and written down in some useful fashion. The plan should indicate at least the sequence of events, the approximate durations, the moments of silence, and any desired dynamics.

Step 6 The final piece is assembled by first recording the loop for the intended length of the composition on one track of the performance tapes. Special effects may be achieved with the tone and volume controls.

Step 7 All tapes are played for the entire class and discussed openly. Attention may be focused on the different qualities of the pieces, the different sounds used with the loop, and special or imaginative design factors. Since scores were prepared, it is recommended that transparencies be made of scores and they be shown during at least one of the performances.

Suggestions. a) Other sound sources could be a metal desk, a heater or radiator, a slide whistle, a metal ashtray, a file cabinet, a homemade one-stringed instrument, a metal chair, etc.

b) When recording the varieties of sounds from one sound source, it would be advisable to emphasize that each strip of tape should contain only one sound. For example, if a desk is rubbed with a pnncil at two different places, producing a similar but different sound, two recordings should be made.

c) If desired, any of the sounds which the students record could be extended by making it into a loop in the same manner that the teacher used to make the ostinato loop.

d) The use of the pause control on the tape machine used for the performance recording should effectively eliminate undesirable clicks. Earphones should be used continuously to check the recording results.

Strategy 4

The purpose is to gain experience with the tape loop and to explore its potential utilization in musical composition. This strategy also deals with improvisation and judgment making.

Step 1 Each group prepares two tape loops of approximately five seconds duration. These may be made for playback at 3 3/4 i.p.s. The sounds should be vocal in origin and should be performed by all of the members of each group. Each tape loop should consist of only one type of sound, i.e. beeps, hisses, moans, clacks, whistles, etc.

Step 2 All of the tape recorders (two in each lab station) are set up with a loop in readiness for playback. Two students should man each tape recorder, one to operate the pause control lever, the other to operate volume and tone controls.

Step 3 All other students are seated in the center of the class surrounded as much as possible by the tape recorders. One student serves as a conductor for an improvised composition which will consist of the sounds on the tape loops.

Step 4 The conductor listens carefully (he may make brief notes if he wishes) to each of the sounds available to him for organization into a musical composition. He then proceeds to improvise his piece by conducting entrances and exits of sounds and by indicating dynamics. The composition should be no more than two minutes in length.

Step 5 Each student has his turn to conduct and to operate the machines while other students listen. It would be advisable to have comparative discussions which are of the sentence completion type, i.e. "The difference in dynamics between the last two pieces ....."; "A major contrast between the pieces was ....."; "If I were conducting I would have .....".

Suggestions. a) When recording the loops the dynamics should be held fairly constant since in performance the beginning and the end of a sound is determined by the conductor, not by the original tape length. The operation of volume controls in performance can give the desired dynamic variance.

b) It may be well to record each of the compositions for recall during discussion or for subsequent referral or analysis. Another tape recorder should be set up for this purpose.

c) It may be well to have students take notes during performances in order to focus attention on analytical judgments.

Other Ideas for Strategy Development

1. The teacher records the sounds of the class entering the classroom and settling down in preparation for the class to begin. Play the tape for the class. Demonstrate the change in sound that results from changing the speed of the recorder, from varying the volume, and from stopping the recording at certain points.

Divide the class into groups, each of which is supplied with part of the tape used in the demonstration. Invite each group to experiment with speed changes, volume changes, and the points of silence which the they feel are most desirable to make the most effective use of the sounds available to them on the tape. Have the group decide which version should be played for the rest of the class.

2. As a first experience with tape splicing, cut up a previously recorded tape into segments of varying length. Mix them so that their original order is no longer obvious. Ask each group to choose enough segments so that each student will have at least two. Have each group decide on an order of segments, and have one member of each group do the splicing of all of the segments. Play the resulting tapes for the comment of the whole class.

3. Demonstrate the preparation of a tape loop. As the loop plays, lead the class in an improvisation of vocal sounds. Record this, sound on sound, and play it back for class criticism. Ask groups to devise their own tape loops and to plan other live sounds to be added, sound on sound.

4. Introduce the filter with a demonstration utilizing "white" sound and the changes that result from filtering out the highs, the middles, and the lows. Incorporate the filter and "white" sound in the next piece.

5. Attach a contact microphone to the edge of a suspended cymbal. Demonstrate the sound produced by striking the cymbal with a soft mallet using a moderate volume control setting. Strike the cymbal again, changing the volume control several times as the sound continues. Change to a hard mallet. Strike the cymbal and dampen it quickly. Invite further experimentation in other ways to change the sound of the amplified cymbal and other uses of the contact microphone. Incorporate the results of this experimentation with previous sound organization principles in the preparation of a new piece.

6. Use sounds made by instruments played by students who study privately as source material. Splice, change speed, filter, add reverberation, and in other ways alter and reorganize these sounds to

create a piece.

7. As another source of sound, remove the needle from a phonograph cartridge. In its place, insert other items which can be made to vibrate: a loosely coiled wire spring, a toothpick, a rubber band. Combine these sounds with others to make a piece.

8. Make a silent movie of naturally moving objects which lend themselves to several possible interpretations: moving clouds shot through swaying branches of trees, a body of water photographed under several different weather conditions, unidentifiable shadows resulting from changing lighting conditions. Compose music for the completed film.

9. Use a sine wave and a square wave tone generator as sound sources. Limit one to short bursts of sound and the other to more sustained sounds. Change recorder speed to give pitch variety. Organize the sounds into a piece.

Basic Equipment Recommended for Each Classroom

(30 students per class
3 composing stations)

3 sound on sound tape recorders, stereo (Sony 630 or equivalent)

1 monaural tape recorder

3 oscillators, combination square & sine

1 filter

patch cords and assorted adapters

1 mixer, four input

6 headphone sets with multistrip jacks

6 splicing blocks and splicing tape

2 Heathkit Electronic Lab kits (optional)

3 contact microphones

1 reverberation unit

3 dozen tapes and extra 3-inch reels

white grease pencils

leader tape, plastic

1 white noise generator

1 ring modulator

1 Turner Electronic Music kit

Additional Equipment which May Be Needed for Short Periods

Oscilloscope

Wave tank

Additional tape recorders

Radio

Record player

Additional sine-square generator

Guitar amplifier with reverberation

TEACHER REFERENCE MATERIAL

Prepared by James Guyton
Tucson, Arizona

Books

Hone, Joseph Victor. A Source Book for Elementary Science. New York, Harcourt, Brace and World, Inc., 1962.

National Science Teachers Association. Energy in Waves. Darien, Conn., Teacher Publishing Corp., 1964. Vol.5.

Unesco. UNESCO Source Book for Science Teaching. 1956. pp.122-130.

Navarra and Zafforani. Science Today for the Elementary School Teacher. Evanston, Ill., Row, Peterson and Co., 1961. pp.379-383

Von Buddenbrock, Wolfgang. The Senses. Ann Arbor, Mich., University of Michigan Press, 1964.

Bruce, Guy V. Science Teaching Today, Experiences with Sound. Washington, D.C., National Science Teachers Associati[illegible] 1951. Vol.VI.

Motion Pictures

Science in the Orchestra. Parts I, II & III. Produced by British Information Service, 1951. Distributed by Contemporary Films. 35 min., color, 16 mm.

Sense Perception. Part I. The Wonder of the Senses. Moody Institute of Science, 1960. 27 min., color, 16 mm.

Simple Waves. Educational Services. Released by Modern Talking Pictures Service. 1959. 27 min., b. & w., 16 mm.

Sound Waves and Stars: The Doppler Effect. Film Association of California, 1964. 12 min., color, 16 mm.

Sounds and How They Travel. Academy Films, 1965. 11 min., color, 16 mm.

Approaching the Speed of Sound. Shell Oil Company, 1958. Made by Shell Film Unit. 27 min., color, 16 mm. (High-speed Flight 1)

Pen Point Percussion. National Film Board of Canada, Ottawa, 1951 Released in the U.S. By International Film Bureau. 7 min., b. & w., 16 mm.

Fundamentals of Acoustics. (2nd ed.) Encyclopedia Britannica Films, 1950. 11 min., b. & w., 16 mm.

Sound Waves and Their Sources. (2nd ed.) Encyclopedia Films. 11 min., b. & w., 16 mm.

Sound Waves in Air. PSSC Physics Film Series. Physical Science Study Committee. Modern Learning Aids. 1961. 35 min., 16 mm.

Sound About. Charles Cahill and Assoc., Inc. Aims Instructional Media Services, Inc. 1967. 11 min., color, 16 mm.

Sound for Beginners. Coronet Films, 1960. 11 min., b. & w., 16 mm.

The Alphabet Conspiracy. Mountain State Telephone Films. Bell Telephone Educational Films Service. 60 min., color, 16 mm.

Gateway to the Mind. Mountain State Telephone Films. Bell Telephone Educational Films Service. 60 min., color, 16 mm.

(See Bell Film Catalog for other related films.)

Recording

The Science of Sound. Phonodisc. Folkways Records, 1960. Science Series, Bell Telephone Laboratories.

APPENDIX F

MMCP

INSTRUMENTAL STUDY

A Program of Discovery and Creativity for Beginning Instrumentalists

Ronald Thomas

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PREFACE

Tony's 10 years old, and his trumpet is two weeks old. It's so new it has only one tiny dent so far, a little one on the top where it fell off the chair when ... well, it really wasn't his fault. The book with the notes for the trumpet is only one week old, and Tony can play the first two pages already. When he can play 14 more pages, the teacher says he can join the band. That's up through eighth notes. They're black with a thing hanging down. There are over 60 kids in band, some of the coolest kids in school. The band plays for assemblies and if the weather's good enough to practice marching, maybe the Memorial Day Parade.

Fourteen more pages, that's about 12 weeks if he practices hard. His dad used to play trumpet when he was a kid, and he wants Tony to play some tunes. But if Tony plays tunes he can't practice the pages, and then in 12 weeks ... Anyway, Dad didn't take lessons in school or anywhere for that matter. He just played tunes, not notes and pages.

If Tony only knew more notes and could buzz like Andy, maybe it would only take 10 weeks. Andy plays better than any kid and is in sixth grade. The sixth grade kids take band instead of music. That's cool.

Taa2 3 4 Rest 2 3 4 Taa 2 3 4 Rest 2 3 4
Taa 2 3 4 Rest 2 3 4 Taa 2 3 4 Ta 2 3 4

Tony lost his place and got too many Taa's --- and his lip hurts ... and the stupid second valve keeps getting stuck --- and what time is it now?

Twelve more weeks!

There are tens of thousands of Tonys in 4th grades. About two thirds of them will stick it out through lesson 16 and get into the band. Lots of these kids won't play in junior high band though, and just a few will ever make high school band. After high school band - well that's something else.

What is the instrumental program for? Why did Dad buy a trumpet? Why should Tony practice? Why does the music teacher give lessons? What does all this do for Tony that really makes a difference in Tony's life? Why a trumpet rather than a football, a chemistry set, a new bike, or a foot-high pile of Batman comic books? There must be real reasons.

INTRODUCTION

Although the project has produced a curriculum which well serves those classes which have a strong cognitive intent, implementation of the curriculum in its present form is difficult in certain learning situations. A principal reason is that some areas of the total curriculum, at least in common practice, have very limited cognitive, attitudinal or aesthetic objectives. These situations must be revised in order to bring a unity of artistic and educational purpose to the total music learning experience of the child.

One area of particular concern is the instrumental class, the group lesson program where youngsters of the 4th, 5th, and 6th grades begin their instrumental instruction. The reasons for concern are many: the large number of students involved, the standardized and mechanical nature of the program, the fact that this is the first step of a new learning experience for most students, the great potential for interaction of this program with the regular music class, the breadth of acceptance of this type of instructional program by schools throughout the country, and the severity of the limitations for student musical growth inherent in the standard practices of the instrumental class.

The following are the first steps of an experimental program designed to see what would happen if:
- the beginning instrumental program encouraged and valued the musical judgments of students.
- the instrumental class became an integral part of the total music program.
- each child employed his creative imagination in his instrumental learning experience.
- the goals of the program were broadened to include musical cognition, musical attitudes, and aesthetic concern as well as skill development.
- aural sensitivity and discrimination were emphasized.
- the student didn't depend solely on a visual stimulus and a kinesthetic response at early stages.
- the instrumental class were intended to serve the student, not to train the student to serve the instrumental program.
- the instrumental class were operated on the basic learning and artistic principles of MMCP.

THE INSTRUMENTAL CLASS CURRICULUM

Curriculum in music, even experimental curriculum, is much more than a method, a list of activities, or even a prescribed sequence of data or concepts. It is a whole experience developed to affect attitudes, skills, cognition, and aesthetic sensitivity. The design of curriculum, therefore, demands a conscious concern for three constituent elements: the student, his nature, interests and unique ways of viewing and becoming involved; the substance of the discipline, its character, inherent concepts and breadth; and the educational environment including the teacher, the process, and the conditions for learning. In order to grasp the essence and define the objectives of this experimental MMCP program for the instrumental class, each of these constituent factors must be carefully examined.

The Student

When Tony and his pals carry their trumpets into the music room for the first time, they're ready for action. Maybe they've tried a few timid toots or ear-shattering blasts at home; maybe the neighbors have already begun to moan. At least, Tony and his pals have come with high hopes and great enthusiasm. They want to play that horn even if the conditions involved with "playing that horn" are rather vague. Certainly they envision an end product not a period of slavish drill. Their vision doesn't allow monotony, conformity, or sacrifice. Nor does it include the relinquising of their own personal judgments or dreams to the external demands of an adult or a methodology.

Tony comes to class for information, technical help, some guidance and approval. He has his own image of achievement and mastery where he is a performer and can do real things with that trumpet.

This is the inventory of items Tony, the student, brings to class the first day: an image of success; a great deal of enthusiasm and desire; many preconceived notions regarding music and the trumpet; a considerable backlog of knowledge, tastes, and interests; a personal reason for becoming involved; and a recognized intrinsic need for help. These are real things because they are the student's contribution to the basic ingredients of the curriculum. They must be regarded as vital component factors, for without them the curriculum is useless. It may work well for the instructor or the school, but it will not meet the most important criteria of all, to work for the student.

The Substance of the Study

The MMCP Synthesis contains an explicit analysis of the nature and fundamental characteristics of music. While this need not be reviewed in detail here, every facet of that analysis of music is as pertinent for the instrumental class as for any other area of the total music curriculum. In addition, the formulation of the study around a spiral of musical concepts, as described in the Synthesis, is considered of vital importance if the instrumental class is to be more than a training center for skills or a shop for mechanical and dextrous productivity. It is urgent, therefore, that the substance of the curriculum for the instrumental class be music in the terms laid down in the Synthesis. This includes the concepts of music, the nature and meaning of interaction of elements, the structural possibilities, and the characteristics of expressiveness, a continuing art, and creative vitality. It is also important that the student develop a sensitivity to sounds, all sounds used musically, not just those of his own instrument.

But this is not the general music class. The instrumental class has unique features and advantages which distinguish it and demand special substantive considerations. The two most significant features are the instrument and the specific expectations of the student. He has a musical tool and he intends to learn and use it. The substance of the curriculum then must meet his anticipations. It must include knowledge about the instrument, the techniques of operation, and provide solid experiences which will allow the student to develop proficiency in the techniques of performance.

These aims of skill development along with cognition and musical perspectives are not incompatible. They are, in fact, totally reinforcing with developing skills providing the means and stimulation for real musical exploration. Conversely, the musical substance of the program can be organized to challenge the creative imagination of the student and provoke an intrinsic drive for the continued acquisition of more refined skills.

The substance must include all of these things and more. It must deal with music, not only instrumental performance. It must emphasize aural discrimination and musical thought and judgment, not simply a kinesthetic response to a visual stimulus. The curriculum must transmit the basic nature and concepts of music to the student so that he conceives of his own instrumental work as a musical experience, not merely a technical achievement. Simultaneously, the substance of the instrumental class must include those vital experiences which will lead to mastery of the instrument, not for its own sake, but because of the personal urgency which stems from an expanding musical insight and genuine enthusiasm for music.

But there is more. When considering the substantive content of the instrumental class, it is imperative that the curriculum not be regarded as a heavy, dogmatic, or formalized methodology. The teacher must insistently ask the question, "What does Tony want to explore for himself?" One must always be aware that a personal sensitivity to and an affinity for music cannot be imposed on the student. The curriculum must have a substance which has honesty and meaning, but it should never get in the way of the child and thwart his own innate development.

The Environment for Learning

Of the three components of the curriculum - the student, the substance, and the environment - the last is certainly the most manipulable. In fact, the learning environment must be created solely to serve the needs of the other two factors. This is fundamental. There is nothing sacrosanct about the instrumental class, nothing in method or structure which is inviolate or inflexible. It is merely a facet of the total music learning experience, simply a vehicle for learning devised to adapt to the demands of the student and the substance.

Similarly, the instrumental class should never be regarded as a preparatory stage for real musical involvement. Nor should it be thought of as a survival course for prospective band or orchestra members, for the validity of these organizations as reliable and productive educational vehicles is seriously in question. It is rather a music class which, because of its time and particular attraction to the student, offers one of the greatest opportunities for attitudinal and cognitive growth. There are few instances in the entire school curriculum where the student so willingly seeks involvement or comes to the class with such defined aspirations. The educator, therefore, must regard the instrumental class as an exceptional educational vehicle which has a unique potential to influence the lives of the students. Even as it is not a preparatory experience, it cannot be thought of as a terminal experience even if the student should not continue to play the instrument. For the insights, judgments, and attitudes gained here must be relevant to all further as well as previous contacts with music.

When one refers to the learning environment many aspects of the learning situation are implied. It includes the class structure and mechanics for operation. Also implied are the processes and types of educational strategies employed to stimulate and support effective learning. Most significantly, the learning environment includes the teacher and the atmosphere he or she creates for interaction and communication. While the general nature of these facets of the learning environment is contained in the Synthesis, some thoughts relating specifically to the instrumental class should be stated.

Class Structure. For initial stages of instruction (probably, at least the first semester) all classes should be grouped homogeneously by instrument. After some level of skill security has been attained, the classes should be grouped with mixed instrumentation. They may also be arranged so that students of like ability work more closely together.

Classes should be held at least twice, and preferably three times each week during the initial stages. This is imperative if one wishes to minimize memory loss, assure the development of correct muscular habits, and sustain enthusiasm. It is also advocated that classes of 8 to 12 students meet for at least 30 minutes.

Where possible the students should have the use of practice rooms or other areas where individual or small group work can be carried on. Since the processes of participation (as described later) depend on activities which emphasize aural discrimination and personal judgment much more than on large-group drills, physical arrangements which allow for some privacy in creative work will contribute much to the success of the program.

Processes for Learning. Much has been said in the Synthesis about the discovery process and the particular relevancy of this process of learning for music. The principles and conditions which are necessary for successful classroom operation have also been presented in some detail. It is extremely important that the learning environment of the instrumental class be consistent with this process, and that the creative classroom strategies which are fundamental to the entire MMCP curriculum become the basis for action in this class. Just because the student has an instrument in his hand, there is no reason to presume that his basic learning characteristics have changed. He is still capable of intuitive thought, reason and judgment. The thrill of personal discovery is still possible. The potential for intrinsic motivation and musical concern have not been dampened. Even the increased urgency for acquisition of dextrous skills has no diminishing effect on the student's intellectual, aesthetic, or attitudinal capabilities. The processes for learning, therefore, must involve strategies which place an emphasis on student creativity, student exploration, student judgment, and student direction. The teacher must assume a role compatible with that described in the Synthesis. Prepared drills, texts, and methods books are not apropos as guides for basic procedure.

In addition, the learning process must emphasize sound discrimination and musical sensitivity over symbol translation. This is particularly critical at the early stages of learning. It is recommended that the strategies of the first few classes (10 to 15) should not employ formal notation, but rather focus all the child's attention on the aural aspects of his musical experience, that sensitivity to sound and judgments of sound qualities, differences, and relationships be emphasized above all translative mechanics.

When notation is introduced it should never become a substitute for the student's personal aural judgment established at the outset of the program. It should be simply another operational tool the child acquires to expand his opportunities for musical involvement.

The complexities of music reading, especially as an integral part of the initial instrumental experience, undoubtedly hamper the musical growth of the student particularly in the areas of attitudes and concept development. This is certainly not to say that music reading should be eliminated from this program. As stated in the fall 1968 MMCP Newsletter, "obviously, the instrumentalist must eventually gain control of translative processes. He must become very adept at using notational signs and symbols. The role of a performing musician demands exactness in reproducing the musical thoughts coded by others. The problem is one of time. When is notation a positive rather than a negative factor in the learning experience? It is when the student has completed initial stages of exploration, when he can think musically and produce his aural thoughts with his instrument, when his tonal memory has been taxed to its limit and the student needs symbols to recall, expand and refine his musical (aural) thought, and when performance of the music of others becomes necessary for the expansion of intrinsic insight beyond that allowed by personal exploration and creative invention."

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CONCEPTUAL MODELS

A key factor in the MMCP instrumental class is the conceptual model. This is a series of tape loops which contain a wide variety of sound materials appropriate for a specific instrument. By using the loops the child can become acquainted with such basic musical factors as tonal quality, durational difference, dynamic variety, pitch relationships, articulation, etc. The loops present the images of raw musical materials, authentically produced in an aural form. The student uses these sounds as models for his own sound production and as component elements in his own creative invention.

The loops are not merely models of sound to be mimicked; they are aural resources which can serve to stimulate aural concepts of fundamental musical items. Their use makes visual symbols unnecessary at the beginning stages of learning and reduces the need for confusing and often arbitrary verbal explanation.

As implied by the term model, these tape loops must be considered as points of departure for the student. One should never consider that the student should simply imitate the sounds of any loop. Indeed, these loops contain only fragmented, isolated, and therefore limited musical information. It is only when the child utilizes the aural images of the loop to produce his own sounds and uses these sounds in a musical setting of his own creation that the experience assumes any musical or educational importance.

The Loop and the Strategy

It is necessary to emphasize that the loops should never be used in isolation from the cycle structure. While the cycle structure certainly cannot be followed exactly (such a procedure has never been advocated for any class), it contains a considerable catalog of organizational concepts which are most pertinent to strategy development in the instrumental class. Actual classroom strategies should include the raw sound materials of the loops, but should also focus the student's attention to broader musical considerations of form, timbre, expressiveness, etc., as presented in the spiral curriculum.

Loop Sequence. The loops have been sequenced to provide the student with a store of information which he can immediately put to use in his own way. It is not a restrictive sequence in the sense that the student is limited to this order of things. In all strategies the student should be encouraged to think, explore, and create beyond the limits of the formal information of the loops.

It is also essential that the information of the loops be considered to be cumulative. Information supplied by any one loop should be used when relevant in subsequent strategies to assure that the child's skills of aural discernment are sharpened and he has a technical as well as conceptual command of the basic raw material. It is also recommended that loops from previous strategies be used frequently to reinforce, reemphasize, and intensify previous perceptions.

While the loops have been sequenced to assure an expanding field of musical resources for the child, the order should never be considered inflexible. Loops are merely items containing practical information, and they should be used only when that information is pertinent to the student in his own exploration. While exploration may be guided by the teacher, it cannot be imposed or forced in direction. The order, time, and extent of loop use, therefore, will depend on the sensitivity of the teacher to his class.

Other Conceptual Models. While the loop may be efficient in presenting an aural image of raw musical materials, it is certainly limited. The lack of a musical context for the items when presented, the lack of a visual image which allows the student to see the physical mechanics involved, and the limitations of breadth make total reliance on loops inadvisable. It is strongly urged that other conceptual models be employed. These should include recordings, movies, concerts, and recitals. It would also be advisable to invite performing musicians from the local area to visit the class and demonstrate their instruments and particular techniques.

The teacher can often serve most successfully as a conceptual model for the student. By demonstrating particular musical items on the instrument the teacher can certainly assist the student to an understanding of the aural potential as well as the physical process.

One word of caution is needed here, however. The purpose of this educational program is to stimulate conceptual understanding, foster critical thinking, excite creative imaginations, and generate a personal perspective of music as well as to develop skills. Too often the teacher tends to impose his particular level of expertise and the constrictions of his own concepts on the student by demanding conformity in response and judgment as well as technique. Techniques of performance should be clarified by the teacher. Hand, finger, lip, breath, and all other physical concerns must be guided and frequently checked. The teacher, however, should never deprive the student of his own intellectual involvement, or become an alternate for the student's own insights or logic.

Tape Loop Mechanics. The tape loop is a very simple piece of equipment to make and operate. Essentially, it is just a length of tape with both ends joined by a splice. This allows for continuous repetitions of a sound, sounds, or a sequence.

To operate a tape loop the following should be observed.

1. The loop should be inserted over the tape heads of the machine in the same fashion used with conventional tape. Care must be taken to assure that the loop is not upside down. (See Roman numeral on splice.) If the tape does not play, correct its insertion.

2. The loop should be kept relatively taut in order to guarantee continuous feed and release from feeding wheels or spindles.

3. Metal objects should not be used to keep tape taut during

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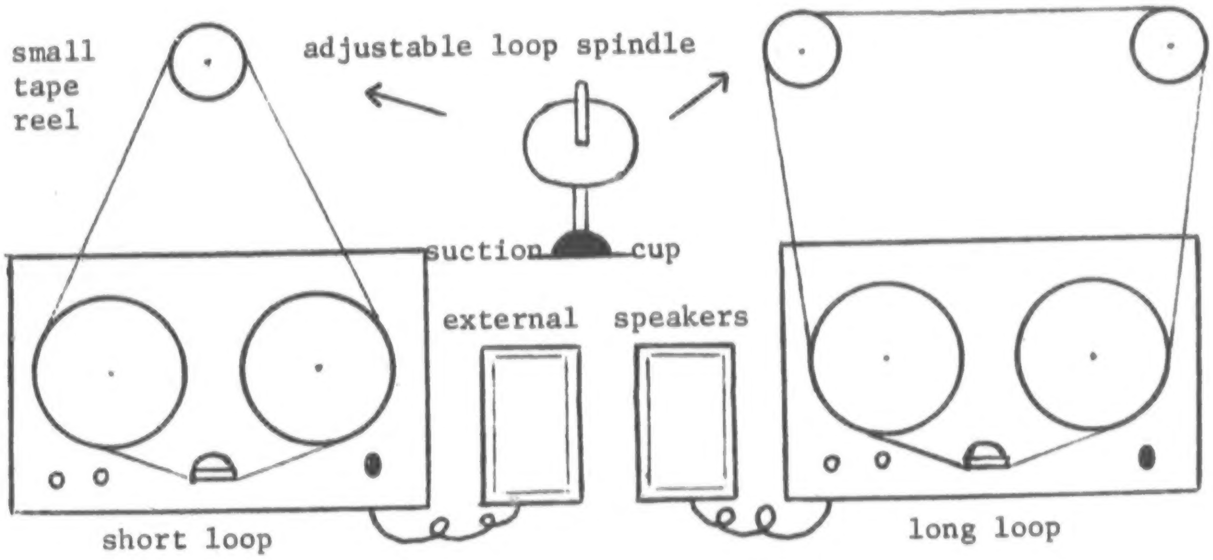
operation. (See diagram of suggested operation.)

It is strongly recommended that good quality external speakers be used with the tape machine. The loops are used as conceptual models of desired aural quality. The concept should not be destroyed by reproduction equipment of dubious merit.

Loop Analysis
(B♭ Trumpet)

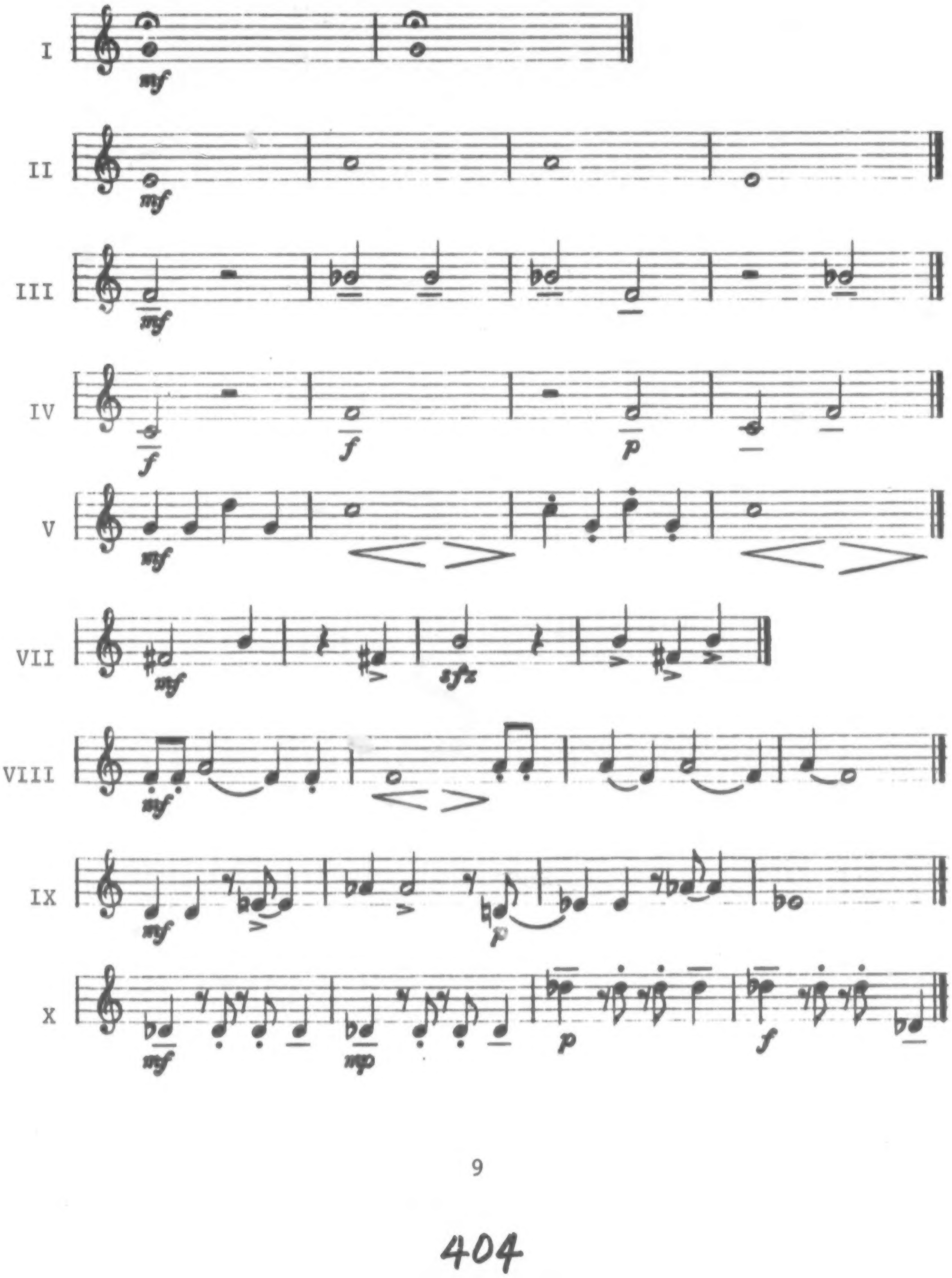
Loop Number	Pitch	Interval	Duration	Dynamics	Articulation
I	G		Long tone		Tenuto
II	E-A	Fourth	Equal tones		Attack, Tenuto
III	F-B♭	Fourth	Shorter tones, Equal rests		Tenuto, Release
IV	C-F	Fourth	𝅗𝅥 𝅝 𝄼	*f* *p*	Tenuto
V	G-C-D	Fourth, Fifth, Second	♩ 𝅝		Staccato, Legato
VI	Review tape - Review material to be completed creatively				
VII	F♯ B	Fourth	♩ 𝄽 𝅗𝅥 𝅝	*mf*	*sfz* >
VIII	F-A	Third	♪ ♩ 𝅗𝅥 𝅝	< >	⌒ .
IX	D-E♭-A♭	Second, Fourth	pulse 𝄾 ♪‿♩	*p* *mf*	> and decay
X	D♭-D♭	Octave	♩ 𝄾 ♪𝄾 ♪♩	*f* *mf* *p* *mp*	— .

Additional loops can be prepared by the teacher to meet the needs of the class or the individual student.



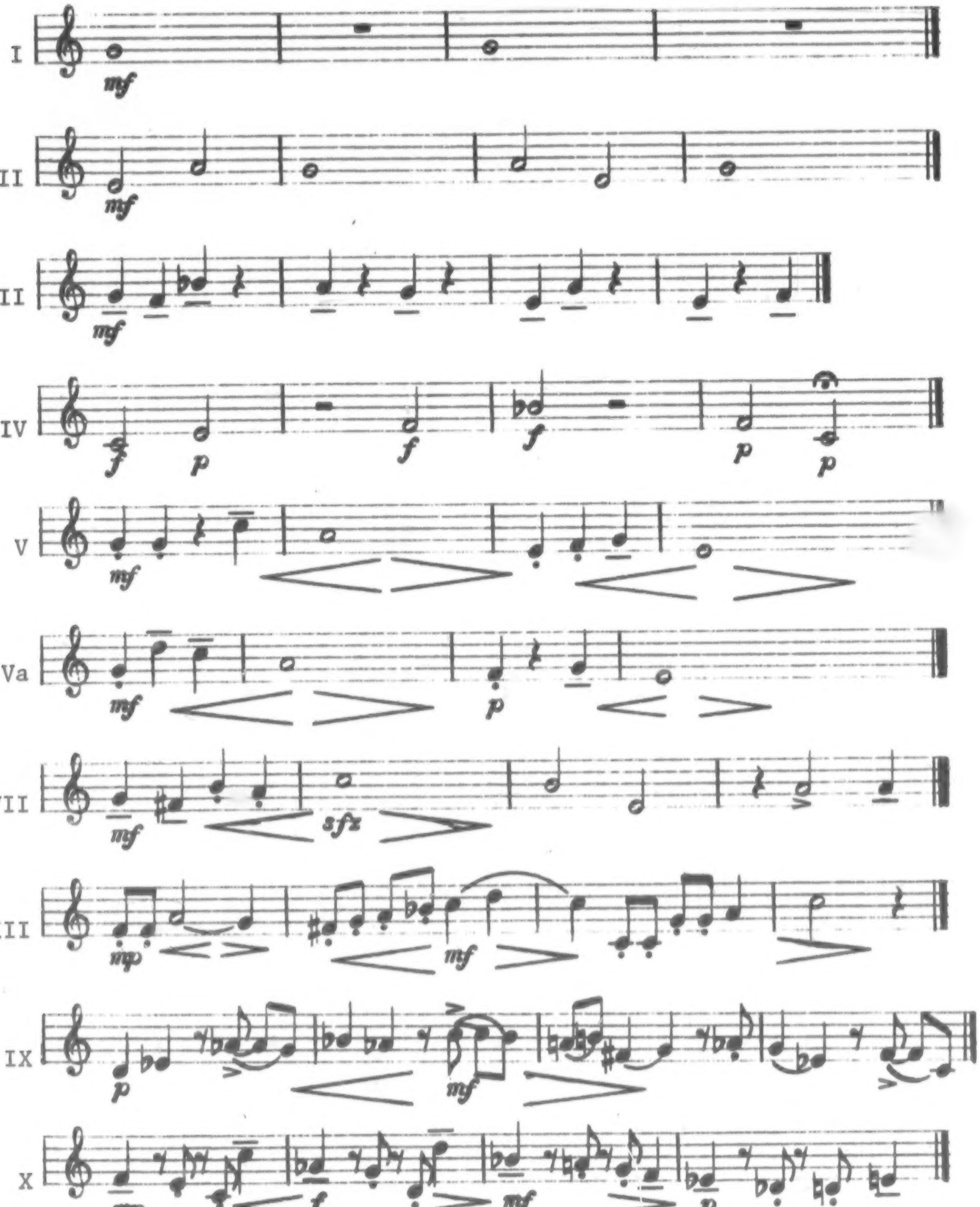
TAPE LOOPS

SET A



TAPE LOOPS

SET B



SAMPLE STRATEGIES

The following strategies are intended as a guide for this experimental program. They are examples of the style of operation and substance which are desired. Rigid adherence to this sequence of activities would ultimately be in direct opposition to the spirit of the intended program. It would deteriorate into another dogmatic methodology with little consideration for the child's sense of exploration, perspective, or direction of inquiry.

Strategy 1, Loop I

Step 1 The students, with appropriate direction and assistance from the teacher, should produce any note they can on the instrument.

Step 2 With the loop being played, the student should duplicate the sound on the loop with his instrument as accurately as possible.

Step 3 As a home assignment, the student should locate other instruments which produce the same pitch (i.e. water glasses, rubber bands, bells, strings, piano, voice, a ruler held tightly on a desk and plucked, etc.). Octave transposition is acceptable but should be noted.

Step 4 Students should demonstrate the various sounds of identical pitch for the class. Discussion by the class should be critical of actual pitch duplication and focus on differences in duration, timbre, and volume. Each student may recruit others to assist with performances.

Suggestions. a) Can a piece be built out of timbre, volume, and duration even when the pitch is not varied? Listen to the Elliott Carter Woodwind Quintet (1949) VIC LM/LSC-6167

b) There is little if any reason to introduce note names or notation. It is most desirable that the note be identified by the sound. If, however, the students know note names, they should use all such knowledge but should stress aural identification.

Strategy 2, Loop II

Step 1 The loop is played continuously and the students match sounds with it. The teacher indicates fingering, checks embouchure, posture, etc. of each student.

Step 2 Using the three notes, each student should create a simple melody, first by improvisation then with a more definite plan in mind. At some place in the piece he should use equal notes of the approximate duration played on the loop. He may also use notes of a wide variety of durations at other sections of

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the piece.

Step 3 All pieces should be performed for the class. Discussion should center around the uniqueness of the pieces, their musical expressiveness, and the adverse effect of incorrect technique of sound production on the musical value of the pieces. "The piece sounded sour and not very good." "What, in particular, gave you that impression?" "The notes seemed to sag." "How could we overcome sagging notes?" Further discussion, demonstration, and trial should emphasize the fact that instrumental techniques are only a means for producing better music. They have no importance, except that they allow the music to be better and the student to really express himself through the sounds and music.

Suggestions. a) Tape all pieces for recall and discussion, for comparison with improved versions, and for a record of accomplishment.

b) In discussions, basic musical ideas may be noted by students such as repetition, motive, style, tempo. Don't force these points but encourage any knowledgeable response by the students and capitalize on it.

Strategy 3, Loop II

Step 1 Students should pair up to work on the next piece which will employ two instruments - one a percussion instrument, the other the trumpet.

Step 2 Each pair will select a percussion instrument from a variety made available by the teacher. The instruments used will be contrasting in sound to the trumpet.

Step 3 Each student team will create a piece that employs both the trumpet and the percussion instrument. The trumpet part will use the three notes learned from loops. These may be checked against the loops. In performance the students should exchange instruments so that each one has the opportunity to play both percussion and trumpet.

Step 4 All pieces should be performed for the class and discussed for accuracy of sound production (the three pitches) as well as general effect and musicality.

Suggestions. a) Some students may find it necessary to devise some notational scheme to assist their memories in performance. Notation should never precede improvisational exploration. Decisions should be made on an aural not a diagrammatic basis.

b) It may be well to have the students take home tapes of these pieces to play for their parents. It is essential that the parents cooperate fully and understand the work of their children.

c) It may be acceptable to refer to the notes by alphabetical names, but no stress should be placed on this.

Strategy 4, Loop III

Step 1 The loop is played continuously while the students simultaneously but individually match sounds with it. If working with one loop is too noisy for personal concentration, set up other loops on additional machines. The students should have the chance to converse and correct each other. The teacher can assist individually where help is needed. Otherwise the teacher should stay out of the way and let the students identify and work out their own problems.

Step 2 Using the five pitches of the first three loops (G, E, A, F, B♭) each student should create a partial melody for his instrument. It should contain the following: one pitch predominant in the sense that it occurs more often than any of the other pitches, another pitch reserved for special use on one or two occasions within the piece, and the use of a repeated figure. The number of repetitions is optional. Each piece should make use of longer and shorter tones and rests as heard on the tape loop.

Step 3 Each student should play his partial melody for the class. Other students should attempt to complete it improvisationally. In this, pitch discrimination is most critical as is identification and use of the repeated figure. The general character and tempo of the piece should also be preserved.

Step 4 Discussions of the various endings should be carried on between the student performers with critical comments by other students. The teacher should stay as far out of this discussion as possible and allow the students to develop their own critical perspectives.

Suggestions. a) There need be no hurry in finishing this strategy. Revisions, exploration, and discovery of pertinent musical factors may go as long as it is productive.

b) Keep focusing attention on the value of good technique to produce good music. This should be emphasized as the only reason for the development of instrumental technique.

Strategy 5, Loop IV

Step 1 Two students should team up for this strategy. Both will play their trumpets. At the outset all students should listen to Loop IV and, as with previous loops, match sounds with it. When they have gained security in producing the pitches, durations and dynamics of the loop, proceed to step 2.

Step 2 The assignment is to create a musical piece which employs two trumpets. The piece will be echo type with one student performing a short section (phrase) and then the other student performing the phrase in echo fashion. The echo may use a straight mute for added effect. The students may alternate their roles during the piece if they wish. Different pitches as learned from the loop, dynamic contrast, varying note durations and rests all are to be used.

Step 3 Play all pieces for the class and record. After all performances are complete play back tapes of all pieces to note the uniqueness of ideas and particularly effective moments.

Step 4 If a general discussion is of value allow time for it. On the other hand, sometimes the music speaks for itself and discussions are intrusive. The students' attitudes will usually reflect whether a discussion is advisable.

Strategy 6, Loop V

Step 1 As with previous strategies the students should match sounds with the loops. Concentration should be not only on pitch but on the ratio of durations (4 to 1), on crescendo and diminuendo, and on staccato and legato articulation. The student should have almost the entire responsibility for his own achievement here. The teacher should not intrude unless help is requested by the student.

Step 2 The students now have eight notes including the octave C. Using these notes, each student should find and practice one piece that he already knows. Any piece learned in or out of school, a song, a rock and roll piece, etc. is fine. The song, however, must be one that contains only the notes C-E-F-A-B♭-C-D. The students should also experiment with dynamic change and shading and with articulation in order to make the melody musical.

Step 3 After the students have played their songs for the class, they can indicate the pitch positions on the staff. Letter names may be written under pitch symbols if the child wishes to do so. No rhythmical notation should be imposed at this time. For pitch positions the student should use only black notes without stems.

Step 4 Students should exchange notation and while adhering to the pitch positions given, create new songs by freely interpreting new rhythmical durational schemes. The effort should be to disguise the original melody as thoroughly as possible while creating a new and exciting melody from the same pitches.

Suggestions. a) The teacher should be very careful to let students discover discrepancies in pitch position both in performance and notation.

b) The various sections of this strategy probably should be given as individual home assignments.

c) Continue to focus attention on the improved quality of the music when the simple techniques of note production are carefully observed.

Strategy 7, Loop VI

This is a review strategy, an opportunity to use all of the musical insight, knowledge, and skill gained in a new and different musical setting. The loop is rather long and should be prepared with a wide variety of sounds.

Step 1 All of the students should listen to the tape loop many times until they are quite familiar with the various sounds, pauses, sequences, and general nature of this partial piece.

Step 2 Each student should consider how he could add his trumpet sounds to the sounds of the loop and thereby create a distinctly unique musical composition. Some discussion by the students and a little improvisation by more outgoing students and the teacher would certainly be in order.

Step 3 Each student should have an opportunity to create his own piece. For this, duplicate loops should be provided for those students who have a tape recorder at home. Other students should have time before or after school or at other times when the loop can be used in school. In the student composition the loop may be played several times, the volume control of the tape machine may be manipulated as desired, or the loop may be utilized in a discontinuous fashion.

Step 4 All pieces should be performed and recorded by the class members. Recordings of electronic or other music should be used to show the extent of creative ideas other composers are using today.

Suggestions. a) While this is a very creative strategy calling for all sorts of imaginative sounds and musical thoughts, a clean performance with good instrumental technique is also a must. If the students wish to use trills, flutter tongue or other performance techniques not previously introduced, the teacher should assist them to perform these with clarity and musicianship.

Strategy 8, Loop VII

Step 1 Loop VII should be used as a model by the students in developing security in the performance of the two new pitches. The students should concentrate on the dynamics, the durational consistencies, and the changing attacks as well as accurate pitch production. With the two new pitches the students now have control of nine different pitches, C, E, F, F♯, G, A, B♭, B, D plus the octave C.

Step 2 The students should be organized into composing teams of three persons. Since this assignment is a composition utilizing a 9-note tone row, the class should hear a few sample recordings of 20th Century music which is based on a tone row in order to identify some of the characteristics of row music. A discussion of the unique musical qualities of serial music that were recognized by the class is now in order. It is strongly recommended that the teacher not take the initiative in this discussion.

Step 3 Each composing team should agree on an order of the nine pitches they have available. All decisions should be made on an aural basis. After the decision on the set (row) is reached, the students should notate the pitch positions on a staff in the agreed order. This will guarantee a performance that is consistent with the row. Each team member should have a copy of the set notation for individual practice. Next, the students create one or two rhythmic motives which will be unifying factors in the composition. These should be short identifiable figures of from 4 to 6 notes (not necessarily different pitches).

Step 4 Each team should improvisationally explore a trio composition. All instruments need not play all the time. The composition may have stretto, polyphonic, and chordal sections. All articulation, dynamic, durational factors (including rests) and tone insights gained to date should be employed. The students may also use their intuitive sense about any new ideas they wish to use.

Step 5 After adequate rehearsal the students should perform their compositions for the class and, if possible, for other classes, teachers, administrators, or parents. (Parents may be invited in to visit this class.) Tape recordings of these pieces will prove invaluable for future use and referral.

Suggestions. a) Four reference recordings which may be useful are: Berg, Alban; Concerto for Violin and Orchestra (1935), Columbia ML 5773, MS 6373. Schoenberg, Arnold; String Quartet #4 Op.37 (1936), Col ML 4737. Schuller, Gunther; Music for Brass Quintette (1961), CRI 144. Webern, Anton; Three Small Pieces for cello and piano, Op.11, Col K4L-232

b) Students should practice their sets individually at home. In this home practice they should explore all the expressive possibilities they can, using all their musical insights.

c) A good deal of time should be allowed for group creative interplay. This may consume as much as two or three periods. Students may wish to rehear one of the recordings. This is most advisable.

d) Since a great deal of discussion, student to student and teacher to student, will be necessary during the course of this strategy, an analytical discussion at the conclusion of the strategy is not recommended. Let the music and the thrill of creative and expressive accomplishment have their own effect.

Strategy 9, Loop VIII

Step 1 This loop contains no new pitches, but it emphasizes other musical factors including aural durational relationships between four different types of notes (as yet unnamed), the aural nature of the crescendo and diminuendo, and the vast difference between the slur and the staccato. Students should perform with this loop (on pitches F and A) until they have control of these musical factors.

Step 2 The next composition is a solo composition. It is in variation form with a theme and three altered versions of the theme. The entire composition should last from 2 1/2 to 4 minutes. The first creative step is to develop a theme that has interest and a character distinct enough to be varied. This piece should be created through improvisation with the trumpet, not with a paper, pencil and black dots. After the theme has been created by the student and he can perform it, he should indicate pitch positions on the staff. In the composition of the theme the student may use notes of any duration that he has learned from the tape. Rests are also available for use.

Step 3 For the first time in this study the duration of the notes should be indicated on the staff. In this first introduction to rhythmic notation, it is imperative that the student not consider the duration in terms of mathematical computation.

The steps to be used here are concise but simple. The teacher should play all of the tapes from II through VIII. With each tape, the durational symbol should be written on the board.

(The long note is 𝅝; the medium duration is written 𝅗𝅥, etc.) The teacher should not refer to the long note as a number of pulses and the other notes as less pulses. The student has had an experience which stressed aural understanding in which duration distinction was based on sound relationships. He simply knows, because he has heard and used notes of four different durations. Whatever he has improvisationally decided should be the length of notes in the theme should be noted as a 𝅝 𝅗𝅥 ♩ or ♪ because they sound that way, not because it is half as long, or a part of a beat, or many beats.

The teacher must trust aural logic, not computative mechanics. Mistakes are bound to occur, but if the student develops an aural perspective of durational relationships at this early stage hundreds of hours of monotonous, superfluous, and non-musical notational mathematics can be avoided.

In this composition meter should not be given any attention. If pieces have a consistent meter, that is all right. If meter is inconsistent or not identifiable at all, that is also fine.

Step 4 The variations should be created in exactly the same fashion advocated for the theme. Variations may make use of changed durations, different articulations, new tempo, dynamics contrast, repeated notes, or any of the other musical ideas the student has gained in the class or from other experience.

Suggestions. a) Do not impose mathematics in any shape or form on durational translation. Please, no reference to counting, pulse, bar lines, number of beats, or fractions of beats! Let aural reason develop!

b) Recordings of variations are most appropriate to demonstrate the way other composers have considered variations. Sections from Bach's Art of the Fugue, Tchaikovsky's Variations on a Rococo Theme for the Cello, and Charles Ives' Variations on "America" would be appropriate for ideas.

Strategy 10, Loop IX

Step 1 The students should use Loop IX as an aural image of the next three notes D, E♭, and A♭. These are difficult notes on the trumpet because of the physical nature of the instrument. The third valve tubing is usually out of tune, and correct intonation requires movement of the third valve slide or a delicate lip adjustment. The particular technique is left to the teacher, but exactness in intonation should be stressed. The loop also presents other musical factors (as noted under Loop Analysis) which should be duplicated by the student.

Step 2 The next piece is a massive polyphonic work in the form of a canon to be performed by all of the students in the class. Each student should compose a piece of approximately 1 minute duration. For his composition the student may select any one of the following five note groupings: D, E, G, A, B; C, D, E, G, A; E♭, F, G, B♭, C; E♭, F, A♭, B♭, C; E♭, F, G, A, B; D, E, F♯, A♭, C. All of the students should individually improvise with these groupings (not just play them in scale fashion) before deciding on the particular five notes they wish to use in composition.

Step 3 The student should compose his dux (the subject of the canon) in such a manner that other instruments will enter at delayed intervals of time playing the same dux. Harmonic conflict need not be considered since each of the pitch groupings is constructed to avoid harmonic dissonance. (Unfortunately, they also diminish harmonic anticipation and movement.) Rhythmic interest, however, as well as dynamic variance are vitally important to cause movement and interest. Allow the students to discover these factors and use their own intuition in creating their composition. All pieces must be notated with copies made for all performers. (Hopefully, copies can be machine made. It is a silly waste of student time to hand-copy 6 to 10 parts.)

Step 4 In performance each composer should serve as conductor, keeping time and signaling entrances. He should station himself in the center of the room with the performers spaced around the room. The performances will be antiphonal with experiments about order of entrance by room position. The class may also experiment with performance where the instrumentalists are all grouped together. What are the musical implications of spatial arrangements?

Step 5 After taping, the class can delve into an analysis of what worked and what didn't work. This strategy can provoke many exciting musical discoveries.

Suggestions. a) Since pitch groupings will be different, it may be possible to combine two or more of these compositions in consecutive order to effectively create a large and exciting work. In this, spatial arrangements may be varied to effect musical interest.

Strategy 11, Loop X

Step 1 The loop contains not only the last note of the chromatic scale, D♭, it introduces the octave, a definite syncopated rhythmic pattern, and four levels of dynamic intensity. Articulation considerations previously presented are also more clearly defined. The students should concentrate on all of these factors when playing their trumpets with the tape loop.

Step 2 The teacher should distribute a fingering chart which indicates the correct fingering for notes in the octaves above and below that used with previous loops. Some in-class practice with these notes may be advisable.

Step 3 The creative section of this strategy is a 12-tone composition composed for five instruments: two trumpets and three percussion. The process for composition here is slightly varied from that used previously.
a) Two students should combine their talents in composing each of the pieces.
b) The row should be decided by the students through both improvisation and notation. The teacher may play several rows (on a trumpet of course) taken from established composers to demonstrate style and mechanics.
c) The composing team should decide on general character, form, percussion instruments, a rhythmic motive or motives, and other guidelines for their composition.
d) The actual composition should be developed through a dual process involving both improvisation and notation.
e) The teacher should act as a resource person throughout this entire operation.

Step 4 In performance three additional students must be involved in order to play percussion parts. (Of course, these are all notated.) Another student may serve as a conductor working in consort with the composers. All performances should be taped.

Suggestions. a) A rhythmic motive which is used at least once by all instruments, and maybe more often by one or two instruments, will serve as a strong unifying agent assuring a sense of order and continuity.

b) At this stage of the instrumental class a public recital program is most advisable. This will not only allow parents to become familiar with their child's creative and musical growth, it will allow the students to present their expressive and personal creative accomplishments to people they care about. This is the nature of music.

APPENDIX G

MMCP

COLLEGE CURRICULUM STUDY

PHASE I

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INTRODUCTION

The materials presented here were those used by the participating colleges in the first phase of the College Curriculum Study. During the first half of 1970, most colleges completed this phase of operations, and some had begun the development of specific objectives and the creation of educational structures to meet the demands of their objectives.

The nature of these materials was dictated by the situation. It was generally impossible for faculty members at colleges to leave their own job environments and examine, in a detached way, the purposes or consequences of their college programs. Consequently, perspectives of education at the college level were sometimes narrowed to standards of proficiencies and data accumulation. Even in these areas, individual faculty members were seldom challenged to consider the relevancy or efficacy of their own teaching. Few schools had determined desired outcomes for the entire educational experience.

These materials were specifically designed to introduce different perspectives of the responsibility and potentials of college education in music. They were not intended to replace other perspectives. The purpose of this phase of the study was to broaden the view and develop fresh questions and insights about college curriculum.

OVERVIEW OF OPERATIONS

The MMCP college curriculum study is directed toward the development of the total educational experience for music education students at the undergraduate college level. Its objective is to redefine the goals and purposes of the learning program specifically for the freshman and sophomore years, and to design curricula based on contemporary educational and artistic thought to meet these goals.

In developing goals, objectives, and educational structures, the study will consider not only historical values and processes and the realities of contemporary educational, social and musical life; it will also look toward the future in order that the experience of learning may be continually fresh, viable and relevant. The term curriculum will be broadly interpreted to include not simply subject matter, but also the learning process and the total concerns of the learning environment. The latter refers to all conditions, apart from process and substance, which affect the educational situation. Included are such items as learning vehicles, time organization, divisions of areas of instruction, the teacher's role, and all physical environmental concerns.

This is an ambitious task, but the resources of the study are equal to the responsibilities. With twelve participating colleges and universities, hundreds of experienced faculty members who have committed themselves, and a wide variety of experts in each of the schools assessing the problems, sharing their insights, creating new solutions, and studying alternatives, the potentials for constructive development are certainly unique. Added to these resources will be the curriculum experience and operational planning of the MMCP.

RESPONSIBILITIES OF OPERATION.

There are essentially two elements in this curriculum operation: the MMCP and the participating schools. Each has a significant responsibility which must be clearly defined and operationally maintained if the study is to succeed. Because the plan demands a high level of interaction between all of those involved, the requirements for both independent action and mutual cooperation are extensive. Interaction can only succeed when the input from all those involved stems from an intense level of personal constructive activity.

The Schools While the final products of this study will reflect the insights of all of those involved, each school must function as a complete and independent entity. The curriculum it produces will be its own. The work which this production demands must be generated internally. From the first investigative stages to the final shaping of the learning program, each college must assume total responsibility for its own constructive action.

Simultaneously, each college must function as an interacting unit with the other institutions involved, thus creating an interdependent structure. This interaction will take place on two levels: the sharing of basic information, alternative perspectives, and creative solutions; and the acceptance of constructive analysis and positive suggestions. Through the work of the coordinating committee and direct faculty contacts between schools such interaction should prove to be a valuable resource of educational, musical, and procedural matters and a strong supportive factor when it is needed.

The work in each of the schools will be carried on through active committees comprised of faculty and students. It is basic to this operation that all of the music faculty in every school participate fully on these committees. This is of enormous importance since the final curriculum product will undoubtedly touch every area of instruction. Through active involvement in all developmental stages, all faculty members will be partners in the design and will understand fully the logic of all curricular decisions which will ultimately affect their instructional responsibilities.

It is also considered imperative that all committees include students from undergraduate levels and, where possible, from graduate levels. This student voice will contriuute to both the relevance of the curriculum and to the education of the students.

Consideration may also be given to separate student committees which parallel the faculty committees. The values of such an open and sensitive course of action are obvious. The development of such committees should not be considered an alternative to having students represented on faculty committees.

MMCP The MMCP will serve three roles in this study. First, it will provide the structure for total operations: the working plans for the process of curriculum development. Since the implementation of these plans will be fairly consistent in all of the colleges, the possibilities for intercollege cooperation and communication are considerably enhanced. The project will also provide consultative assistance in the implementation of these plans when this assistance is requested by any college. Second, the project will provide an overall framework for interaction. Working with and through the coordinating committee, the project will serve to reinforce each college in its own efforts, establish the means for a high level of interaction, and provide an overall unity of purpose which is in itself a motivating factor. Third, from its previous curricular work the project provides a structural basis for curriculum exploration. The rationale, processes, and educational structure which have been constructed by MMCP will become vital resources in considering new curricula at the undergraduate level.

THE PROCESS STRUCTURE.

The work of the study has been divided into three phases, each covering approximately one year. In phase one, a freshman curriculum will be prepared. Phase two will be concerned with the pilot study of this freshman curriculum and the development of a sophomore curriculum. During the third phase, both a revised freshman curriculum and the sophomore curriculum will be studied under operational conditions.

Item 1

In each of these phases there are five broad operational stages.

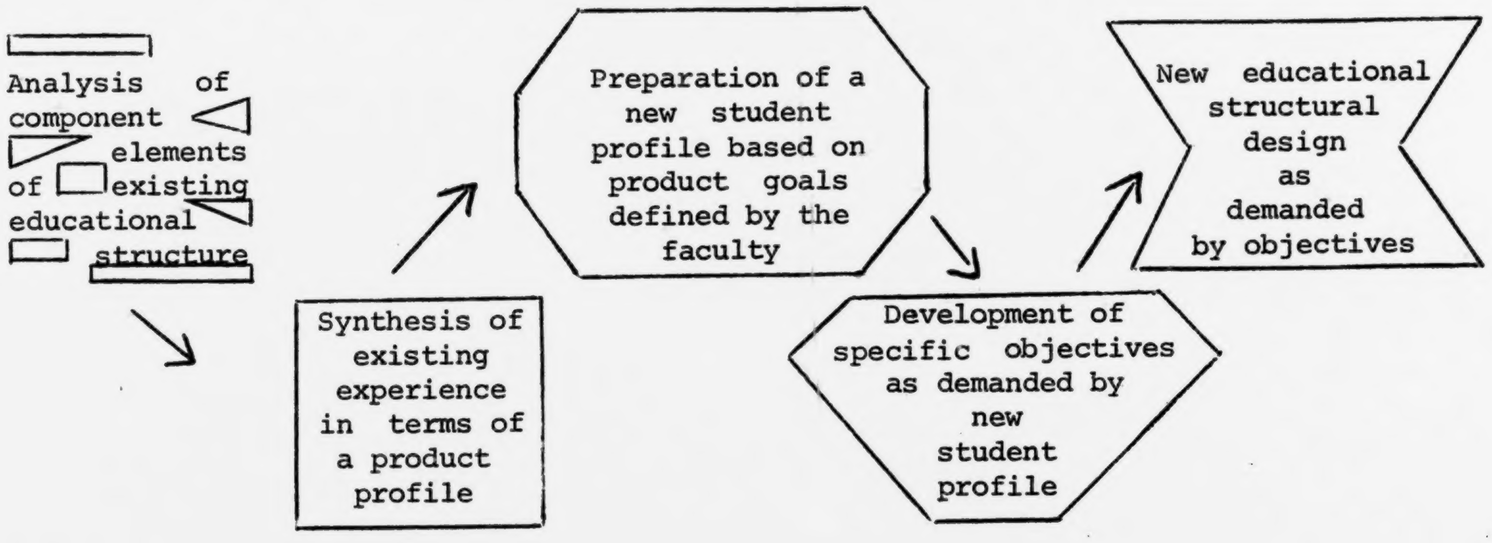
Step 1. Each college must determine precisely what exists in terms of educational conditions. This is best accomplished by preparing profiles of all of its components based on a factual analysis of each of these components or departments.

Step 2. From this component analysis, each college must assess the resulting product. Here the profile of a student will be drawn, based on the nature of educational experience projected by the analysis of step 1. (More than one profile may be advisable based on the inputs of various combinations of departments.)

Step 3. A new student profile will be prepared which reflects the insights gained from steps 1 and 2, and new educational goals which are defined by the faculty.

Step 4. Specific objectives will be created for all facets of the educational program to assure the achievement of the new student profile.

Step 5. With the new student profile as a production goal and the newly delineated objectives as primary criteria, a new curriculum will be created. This curriculum must take into account all of those factors which influence the student's growth and perspective, including: the nature, sequence and breadth of subject matter; the learning processes and styles to be employed; and the conditions of learning shaped by the total educational environment.


Analysis of component elements of existing educational structure
Synthesis of existing experience in terms of a product profile
Preparation of a new student profile based on product goals defined by the faculty
Development of specific objectives as demanded by new student profile
New educational structural design as demanded by objectives

DEPARTMENT REPORTS

For the purposes of this study the term department is used to indicate a general division of the total music program. Five such departments will present reports; the theory department; the applied music department; the history-literature department; the performance department; and the music education department.

The first activitity in this curriculum study is the gaining of a perspective of the total educational program and a clear picture of the product that emerges from it. To develop this total view it is important that each division or department of the music program contribute an explanation of its own operation, structure and function. Such reports should deal with the total undergraduate program, not simply the work of the freshman and sophomore classes. If a department deals predominantly or only with upper classes, their report should present the logic of such action, along with the format described.

These reports will not only be of value to the entire faculty of the school in considering the total educational product, summary versions will be circulated to similar departments of other participating colleges. In this way the reports could serve to stimulate new thought throughout the entire network of colleges.

With this dual objective for reports, it will be necessary to prepare both an oral presentation for the local faculty and a written summary for broader circulation. Because of the number of reports being prepared, some common framework for report preparation and format is necessary. These basic ground rules will assist in the analysis of the wide variety of information that will become available.

PREPARING THE REPORTS.

It is important that all members of the department, whether it be applied music, or history, or theory, etc., work together in preparing the reports so that they truly represent a cross section of thought and action. The reports should not simply be statements by the department head. If major differences exist, a minority report may be made by department members who feel that their opinions should be heard.

Each department should include at least two students in all deliberations on reports. These students should have experiential knowledge of the department from their work in classes within the department. It is recommended that larger departments with nine or more faculty members include one student for every three faculty. The student members of the departmental committee should have an equal voice with the faculty in preparing the reports. If they, like other members of the committee, wish to present a minority report, this should be honored.

Item 4

CONTENT OF REPORTS.

Each report should deal with the following:

1. Introduction. This may be a qualifying statement or a background for the report.

2. Describe in detail what you do in terms of instructional methods (activities and processes) and subject matter. (Courses may be considered either as fractionation of subject matter or as a process factor.)

3. Describe why you chose to use these processes and particular subject matter.

4. Describe how you assess the achievement of the above and verify your opinion that achieving the above was worth it to the student.

5. State how your departmental objectives and means of achieving the objectives merge with the total objectives of your school.

6. Other comments.

PRESENTING REPORTS.

Oral reports should be made to the entire faculty by one member of the department. The other members should be available at the meeting to assist in answering questions which may be raised from the floor. Each report should be of approximately 20 minutes in length. (Minority reports may be treated as separate reports or as an addendum depending on the extent of difference.) Twenty minutes should be allotted to questions from the floor.

Written reports should be a summary of the above with a maximum of 300 words and should be typewritten. A form for written reports is provided.

AREAS AND LIMITATIONS FOR QUESTIONING.

After each presentation members of the faculty and students who are working with other departments in the preparation of reports should have an opportunity to pose questions to members of the presenting department. Floor questions should be limited to those which deal with:
1. an attempt to clarify information.
2. the consistency of items in the presentation.
3. support of assertions in terms of materials and practices.
4. the identification of specific objectives.

Questions dealing with the validity or appropriateness of department operations should not be allowed. This is not an open forum, but an attempt to assess the nature of instruction and learning.

Item 5

MMCP COLLEGE
CURRICULUM STUDY

Summary Report, ______________________________Department,
____ (Name of University or College).

This summary of the Department presentation is to be completed in 300 words or less. For further instructions see Item 4, Department Reports.

Introduction

Describe in detail what you do in terms of instructional methods (activities and process) and subject matter.

Describe why you chose to use these processes and particular subject matter.

Item 5

Describe how you assess the achievement of the above and verify your opinion that achieving the above was worth it to the student.

State how your departmental objectives and means of achieving these goals merge with the total objectives of your school.

Other comments.

Item 6
EDUCATIONAL PROFILE of ____________________ AREA
(applied, history, music education, performance, theory)

____
(college or university)

M M C P COLLEGE
CURRICULUM STUDY

Having listened to the area report and to the questions directed to the area faculty, consider each of the following sentence completions. While the report may infer that one condition predominates, it is possible that all three are applicable to some extent. Indicate your assessment of the extent of appropriateness by encircling one number under each statement.

1. The basic curriculum of the area of study is considered to be	a facet of a highly integrated total experience prepared through inter-area consultation 0 1 2 3 4 5	an independent component of the total learning experience prepared through intra-area consultation 0 1 2 3 4 5	the sum of the individual expertise of the faculty members of the area 0 1 2 3 4 5
2. The courses of study within the area rely on	student input 0 1 2 3 4 5	the unique input of the teacher 0 1 2 3 4 5	standard discipline demands and practices 0 1 2 3 4 5
3. Instruction is directed toward	involvement in music on a personal basis 0 1 2 3 4 5	standard knowledge and techniques 0 1 2 3 4 5	job orientation 0 1 2 3 4 5
4. Emphasis is placed on the development of	conceptual insights and aural logic 0 1 2 3 4 5	a background of established information about music (styles, formulae, composers, literature) 0 1 2 3 4 5	functional skills demanded for participation (listening, reading, notating, performing) 0 1 2 3 4 5
5. The musical materials used are	exploratory and/or experimental 0 1 2 3 4 5	representative historical literature 0 1 2 3 4 5	functional and/or utilitarian 0 1 2 3 4 5
6. The style of learning process used is	laboratory-type personal investigation 0 1 2 3 4 5	directed analysis of stylistic models 0 1 2 3 4 5	memorization, imitation, and drill 0 1 2 3 4 5
7. Musical concepts are actualized	through student interpretation and investigation with teacher consultation 0 1 2 3 4 5	under teacher direction with active student participation 0 1 2 3 4 5	through teacher-prepared demonstration 0 1 2 3 4 5
8. Decisions on student achievement are made	with student participation in the decision 0 1 2 3 4 5	predominantly by the teacher 0 1 2 3 4 5	by a jury or through standardized criteria 0 1 2 3 4 5

Item 7
STUDENT PROFILE

(college or university)

M M C P COLLEGE
CURRICULUM STUDY

From an analysis of the composite profiles of all areas, consider the implications for student development. For example, has the educational experience been one where all learning is cross-related or has it consisted of a series of independently planned courses? Has the educational experience allowed for practice in independent action, of has it encouraged an attitude of dependence? From your assessment of the conditions of learning offered by all areas, indicate your opinion of the extent of appropriateness of each of the following by encircling one number under each statement.

1.	**The student considers music**		
	as an integrated whole 0 1 2 3 4 5	as a series of separate but related musical and/or academic interests 0 1 2 3 4 5	as one specialized area 0 1 2 3 4 5
2.	**The student can function**		
	independently 0 1 2 3 4 5	within a given framework 0 1 2 3 4 5	with external direction 0 1 2 3 4 5
3.	**The student is motivated toward**		
	personal musical involvement 0 1 2 3 4 5	acquiring standard knowledge and techniques 0 1 2 3 4 5	preparing for job responsibilities 0 1 2 3 4 5
4.	**The student deals with music**		
	creatively 0 1 2 3 4 5	abstractly, verbally, academically, scholastically 0 1 2 3 4 5	technically and/or mechanically 0 1 2 3 4 5
5.	**The student is concerned with**		
	the exploration of music on a broad basis 0 1 2 3 4 5	music of the "common practice" periods 0 1 2 3 4 5	music of a functional or utilitarian nature 0 1 2 3 4 5
6.	**The student considers learning as**		
	an open-ended and on-going process 0 1 2 3 4 5	the mastery of subject matter 0 1 2 3 4 5	the accomplishment of assigned tasks 0 1 2 3 4 5
7.	**The student makes musical judgments based on**		
	confidence in personal musical values and tastes 0 1 2 3 4 5	established premises of a technical nature 0 1 2 3 4 5	extrinsic values and opinions 0 1 2 3 4 5
8.	**The student considers evaluation in terms of**		
	self-assessment and self-image 0 1 2 3 4 5	comparison with others 0 1 2 3 4 5	external assessment (grades, approval, etc.) 0 1 2 3 4 5

Item 7b

____
(college or university)

MMCP COLLEGE
CURRICULUM STUDY

STUDENT PROFILE

1. The student considers music	as an integrated whole	as a series of separate but related musical and/or academic interests	as one specialized area
2. The student can function	independently	within a given framework	with external direction
3. The student is motivated toward	personal musical involvement	acquiring standard knowledge and techniques	preparing for job responsibilities
4. The student deals with music	creatively	abstractly, verbally, academically, scholastically	technically and/or mechanically
5. The student is concerned with	the exploration of music on a broad basis	music of the "common practice" periods	music of a functional or utilitarian nature
6. The student considers learning as	an open-ended and on going process	the mastery of subject matter	the accomplishment of assigned tasks
7. The student makes musisical judgments based on	confidence in personal musical values and tastes	established premises of a technical nature	extrinsic values and opinions
8. The student considers evaluation in terms of	self-assessment and self-image	comparison with others	external assessment (grades, approval, etc.

Item 9

Factors of Student Profile (grouped vertically from Item 7)

	A	B	C
1. The student considers music:	as an integrated whole.	as a series of separate but related musical and/or academic interests.	as one specialized area.
2. The student can function:	independently.	within a given framework.	with external direction.
3. The student is motivated toward:	personal musical involvement.	acquiring standard knowledge and techniques.	preparing for job responsibilities.
4. The student deals with music:	creatively.	abstractly, verbally, academically, scholastically.	technically and/or mechanically.
5. The student is concerned with:	the exploration of music on a broad basis.	music of the "common practice" periods.	music of a functional or utilitarian nature.
6. The student considers learning as:	an open-ended and on going process.	the mastery of subject matter.	the accomplishment of assigned tasks.
7. The student makes musical judgments based on:	confidence in personal musical values and tastes.	established premises of a technical nature.	extrinsic values and opinions.
8. The student considers evaluation in terms of:	self-assessment and self-image.	comparison with others.	external assessment (grades, approval, etc.).

Item 10

MMCP COLLEGE
CURRICULUM STUDY

PROCEDURAL RECOMMENDATIONS FOR STEPS 1 AND 2

The following are suggestions for procedure. I realize that every situation is different, so it will often be necessary to modify these recommendations to fit individual circumstances.

1. A short faculty meeting attended by all faculty, full and part time, should be held to explain the overall operations of this curriculum study. At that meeting Items 1 and 4 should be distributed to each faculty member. Since Item 1 is self-explanatory, I would not dwell on it to any great extent. However, Item 4 should be gone over in detail. Emphasize the following:

   a) Departmental reports should deal exclusively with things as they exist, not as we wish they were.
   b) The purpose is an assessment of the existing educational situation within the school, not a critical evaluation of any department.
   c) All analyses will be made on the basis of the departmental presentation, so departmental presentations should stick very closely to the form presented.
   d) Summary reports from all five departments (theory, history-lit., applied, performance, music ed.) should be submitted on (date ?) before the next meeting.
   e) Procedures for selecting students to work with each department committee should be established before the end of this first meeting.

2. Check with each department to make sure that the specific assignment for presentation is understood so that it is in line with the demands of the study. Help may be needed in consideration of some of the report topics. Remind individual departments that their reports will go to like departments in 11 other schools. Discourage phony claims but encourage quality reporting.

3. The second faculty meeting will be two hours in length. Pass out Item 6a at the beginning of the meeting. Explain the following:

   a) Uniform interpretation of all the points on Item 6 is not necessary. They should use this analysis sheet within their own interpretative framework.
   b) The analysis should be totally based on the presentation and the following question period.
   c) All boxes should have some percentage indicated, even if it is 0%.

There will be two department presentations at the meeting. For the first presentation select the department you think will set a quality standard for the other presentations. The order for subsequent presentations is entirely at your discretion. At this time the rules for the meeting should be reviewed.

Item 10

a) Each department will have 20 minutes for presentation, and there will be 20 minutes for·questioning and filling out of analysis forms. It is recommended that analysis forms be filled out during the question period.
b) Review the nature of the questioning.
c) All analysis forms will be collected after each presentation. Be sure that the department name is indicated on every analysis form. (If this is not done the resulting confusion could be disastrous.)

4. Have secretaries process the analysis of each presenting department by averaging percentages. They should then prepare copies of Item 6b for each of the faculty, translating percentage figures into the rectangular graphs as indicated. These Item 6b forms should not be distributed until all presentations are made.

5. Summary reports should be mailed to the coordinating committee member of each of the other 11 schools. If you think it advisable, you may also distribute these summaries to your own faculty. Please send six copies of each department summary report to the MMCP.

6. A third meeting, also of a two-hour duration, will allow for the remaining three departmental presentations. The procedure should be the same as described for the second meeting.

7. After this meeting secretaries should compile the statistics of the remaining departmental reports and prepare departmental profiles on Item 6b to be distributed to the faculty members at the next meeting. Please forward six copies of all departmental profiles to MMCP so that we may accurately gauge our next steps.

8. The final meeting of Steps 1 and 2 should have the following agenda:

a) Copies of the five departmental profiles (Item 6b) should be distributed to each faculty member.
b) Using the overhead projector and color transparencies, each of the profiles should be briefly described and the meaning of the colors and rectangular graphs explained. Attention may also be drawn to the lopsided nature of the profiles.
c) Item 7a, the student profile in percentages, should be distributed to each faculty member and explained by using an overhead projector. Emphasize that while many categories of the student profile are highly related to identically numbered categories of the department profiles, there are many cross-relationships between numbered categories and these should be considered in preparing the student profile. Also emphasize that the student profile must be drawn in strict concurrence with the information of the department profiles. Extraneous assumptions that are not evident in department profiles should not influence the student profile.
d) Divide faculty into committees of five (make sure that each committee

is broadly representative) to prepare student profiles. The transferral of departmental information to the student profile should take no longer than 1/2 hour.

e) Have a 15-minute coffee break while secretaries with adding machines compile the various committee profiles and prepare your Item 7b transparency.

f) Pass out Item 9 for consideration when viewing the transparency of the student profile.

g) Open discussion of student profile.

h) Announce assignment as follows:
Each faculty member (or five-member committee) should prepare a new student profile based on the same categories as Item 7 but indicating the balance of all factors which they consider to be ideal. Copies of Item 7b and blanks of 7b will be distributed the following day. In preparing these new student profiles no consideration should be given to any supposed limitations of funds, faculty, facilities, time, educational conditions, etc. These profiles should reflect the highest idealistic product goals of the faculty.

PROCEDURAL RECOMMENDATIONS FOR STAGE II

The second stage begins the creative and developmental side of the curriculum study. In this stage there are four major steps, the preparation of the Ideal Student Profile and the Rationale (together considered to be basic criteria for future action), the "what" and "why" of curriculum substance, the relationships of subject matter, and the "how" of substance for the freshman year.

Item 13. The Ideal Student Profile should be prepared in exactly the same manner as the Existing Student Profile. The recommendations of faculty members should be compiled into one overall profile. Copies should be distributed to the faculty for future reference.

Item 14. This worksheet is taken from the MMCP Synthesis. It is not intended for adoption by every school. It is merely a guide, an alternative perspective and a basis for arguing. This copy may be extended, revised, amplified, accepted or thrown out, but whenever anything is discarded something else must take its place. Remember that whatever is devised will become fundamental criteria for all further development.

It is suggested that copies of Item 14 be circulated, and faculty members submit written recommendations for inclusion or exclusion. A faculty meeting will provide opportunities for discussion and voting on these recommendations. From this meeting a three- or four-member committee can prepare a Rationale with final faculty approval by mailbox vote.

Item 15. This Item must be prepared by eight committees each dealing with one subject area. Committees should be heterogeneous with the broadest possible spread of areas of expertise. It will probably be possible to deal with all of the statements from all committees at one faculty meeting if each committee report is shown on an overhead projector. It is recommended that a short discussion be held on each report and a vote be taken before moving to the next report. If the faculty considers it advisable, any committee could meet again to consider the suggestions and arguments made at the faculty meeting. A mailbox vote could follow such revisions. Votes are strongly recommended because of the implications of these statements on future decisions.

Item 16. This can only be done in an open forum. Use the transparency so arrows can be shifted and studied. Copies of final decisions should be made up and distributed to the faculty as a basis for further decisions.

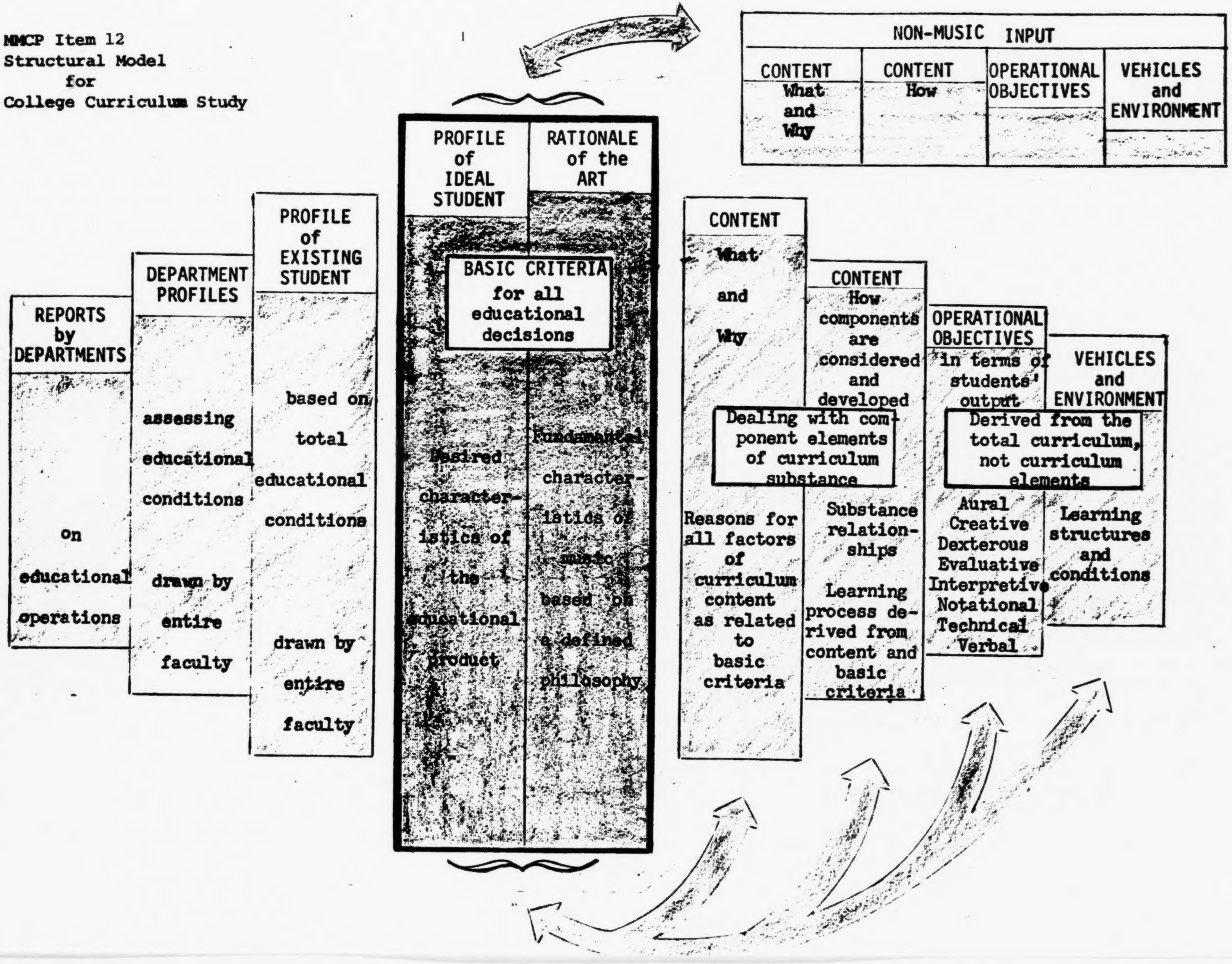
Item 17. Follow the same process suggested for Item 15. Regroup committee personnel, however, so the same faculty members do not have the same confrontations.

Please send copies of all faculty prepared items to MMCP as fast as possible. They are vital in the preparation of new study materials. Also send copies of Items 13, 14, 15, 16, and 17 to all other colleges in the network.

Item 11

By this time faculties should understand that the product of one step becomes the raw material for the next step. A decision on any item becomes policy guiding subsequent decisions. Obviously a great deal of specificity and clarity of thought is necessary in every decision. This does not mean a great deal of time, however. In sessions in which students helped us to test materials, each item was prepared in less than one hour. The biggest problem is in focusing attention on the issue at hand.

MMCP Item 12
Structural Model
for
College Curriculum Study


NON-MUSIC INPUT
CONTENT
What and Why
CONTENT
How
OPERATIONAL OBJECTIVES
VEHICLES and ENVIRONMENT
REPORTS by DEPARTMENTS
on educational operations
DEPARTMENT PROFILES
assessing educational conditions
drawn by entire faculty
PROFILE of EXISTING STUDENT
based on total educational conditions
drawn by entire faculty
PROFILE of IDEAL STUDENT
RATIONALE of the ART
BASIC CRITERIA for all educational decisions
Desired characteristics of the educational product
Fundamental characteristics of music based on a defined philosophy
CONTENT
What and Why
Reasons for all factors of curriculum content as related to basic criteria
CONTENT
How components are considered and developed
Dealing with component elements of curriculum substance
Substance relationships
Learning process derived from content and basic criteria
OPERATIONAL OBJECTIVES
in terms of students' output
Derived from the total curriculum, not curriculum elements
Aural
Creative
Dexterous
Evaluative
Interpretive
Notational
Technical
Verbal
VEHICLES and ENVIRONMENT
Learning structures and conditions

Item 13

____
(college or university)

MMCP COLLEGE
CURRICULUM STUDY

IDEAL STUDENT PROFILE

1. The student considers music	as an integrated whole	as a series of separate but related musical and/or academic interests	as one specialized area
2. The student can function	independently	within a given framework	with external direction
3. The student is motivated toward	personal musical involvement	acquiring standard knowledge and techniques	preparing for job responsibilities
4. The student deals with music	creatively	abstractly, verbally, academically, scholastically	technically and/or mechanically
5. The student is concerned with	the exploration of music on a broad basis	music of the "common practice" periods	music of a functional or utilitarian nature
6. The student considers learning as	an open-ended and on going process	the mastery of subject matter	the accomplishment of assigned tasks
7. The student makes musisical judgments based on	confidence in personal musical values and tastes	established premises of a technical nature	extrinsic values and opinions
8. The student considers evaluation in terms of	self-assessment and self-image	comparison with others	external assessment (grades, approval, etc.

PHILOSOPHICAL RATIONALE WORKSHEET

Throughout history the sounds of music have been both persistent and diverse. For at least the past 6000 years, music in some form has been an integral part of cultures in all corners of the globe. In this historical and geographical span the sounds which comprise music and the structural ideas for combining these sounds have been extremely varied. The purposes and functions of music have also ranged widely extending from the purely social to the intellectual, and from the utilitarian to the most aesthetic.

Antecedent to all other curricular concerns is a clearly defined position on the nature of music, and an identification of those basic qualities which give meaning, endurance, and importance to the art. These basic qualities or characteristics must transcend the differences of specific styles, sound sources, or other idiomatic factors. They must be fundamental to all music whether it be historical, contemporary or in the future.

These fundamental characteristics must also be the most immediate responsibilities of the study, underlying every classroom experience and evident through every educational strategy. For without this depth of perspective the learning of data, skills, and techniques has limited purpose, and the full potential value of music to man is obscured.

Music as a Way of Knowing

The first characteristic is that music is an agent for the projection and clarification of thought. It is a medium of expression which man has used not as a substitute for verbal or visual means, but because it serves a need for the transmission of thought that is not met by other communication processes. Through a distinctly unique and forceful language of sound, music conveys ideas and feelings in a way that is not matched by words or pictures. In this sense music becomes a way of knowing and experiencing. Thoughts are expressed, transmitted, received and clarified on an extremely personal and intimate level. It is an aural means of realizing and internalizing experience.

The Continuing Nature of Music

The second characteristic of music is found in its continuing nature. It has existed as a reflection of man's experience and intrinsic concerns for as long as our history records. It exists today not only as a curatorial interpretation of historical times and other societies, but as a contemporary, living, and vital expressive medium. Most important is the fact that music has always been sensitive to those contemporary conditions and social structures of the time of its creation. As society has changed so have the internal structures and expressive devices, but not the intrinsic nature of the art. It has evolved new sounds, new patterns, new modes, and new techniques of organization in order to meet the new tempi, structures, and pressures of life and society. Music is a continuing art, always sensitive to and interpreting the present.

Music as a Creative Vehicle

Music is a vehicle for man in his constant search for individual creative fulfillment. Every significant musician through history has sought to extent the means of the art. He has not been content to merely duplicate the systems and idiomatic practices of his predecessors, but has found new means to meet the expressive demands he felt. Often this search, this exercising of creative drive and independent spirit, has produced radical changes in music. Ideas of of dissonance and consonance have been discarded as new expressive forms have arisen. Sound sources, rhythmic formations, harmonic textures, and even the relationships of the basic elements have undergone many revolutions. The pace of

Item 14

this search for new means within the art has been commensurate with the pace of man't total creative evolution. Today this search is undoubtedly the primary concern of the art.

BASIC POLICY - SUBSTANCE INCLUSION

Listed below are six broad fractionations of the subject matter of music which cover all courses in music listed in catalogues of the 12 participating colleges. While the first two categories are self-explanatory, the third and fourth categories may need a word of explanation.

Under Performance come all of the large group ensembles, solo, vocal and instrumental classes, and such interpretation classes as conducting. If a further fractionation of this category is deemed necessary to satisfy the statement you prepare, this may be done by the individual school. The category Structural Concepts and Practices covers all classes dealing with systems and principles of the organization of sounds. Included are such traditional studies as theory, instrumentation, counterpoint, composition, etc.

> Note: Music education courses should be regarded as "Non-Music Courses" (see Item 12), since the subject matter of these classes deals with learning and teaching principles, management and administration techniques, philosophy and psychology.

Under each fractionation there are two statements which are to be prepared. Neither statement infers that any fractionation will necessarily remain a separate component of the curriculum. The first statement is an explicit definition of the substance; the second, the primary reason for its inclusion in the freshman curriculum. Every statement should be checked for its consistency with both the broad goals of the ideal student profile and the rationale on music.

Following these two statements there is space provided for one or more secondary reasons for considering this fractionation as a part of the freshman curriculum. This latter statement may be an outgrowth of the primary reason or completely separate from it. It is important that the main and secondary reasons be listed separately since they will be used differently in subsequent steps of the study. After the faculty approves the values and compatibility of all of the statements with the Basic Criteria, they will become policy guiding subsequent steps.

Sample statements have been prepared in order to demonstrate the form and nature of the definitions and reasons. These sample statements may be accepted, ignored, amplified or used simply as a reference. They are not intended to stifle the creative and analytical thought of the faculty. Where possible every statement should be expressed in preferably one but not more than two sentences. This will enhance the clarity and usefulness of the statement in further curriculum planning.

Item 15

Fractionation I — Music History

Sample Statements

What. Music History is a study of sociological and philosophical considerations of music including past conditions of the art and the relationship of the art to people.

Why. The study of music history allows for the development of a contextual perspective of the past and the present within the art and provides a philosophical and cultural framework for future musical thought.

What ____

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Why ____

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Secondary Reason(s) ______________________________

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Item 15

Fractionation II	Music Literature
Sample Statements	What. Music Literature is a study of existing music whether it be written down, recorded, or live. Why. The student deals with the sounds created by many musicians and discovers the aural logic of these sounds and in this develops an intellectual and aesthetic basis for musical judgments.

What ______________________________

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Why ______________________________

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Secondary Reason(s) ______________________________

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Item 15

Fractionation III	Performance
Sample Statements	What. The performance class is a study of the intellectual, aesthetic and physical operations concerned with musical interpretation and the production and control of sound.
	Why. The performance class provides the student with the opportunity to explore musical alternatives and practice judgment making, while he refines his techniques of sound production and control.

What ______________________________

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Why ______________________________

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Secondary Reason(s) ______________________________

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Item 15

Fractionation IV	Structural Concepts and Practices
Sample Statements	What. This is a study concerned with problems and solutions in the creative organization of sounds. Why. This study provides experience in discovering and dealing with the structural factors in music, and fosters the growth of creative, interpretive, and analytic abilities in music.

What ______________________________

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Why ______________________________

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Secondary Reason(s) ______________________________

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Item 15

Fractionation V	Aural Skills
Sample Statements	What. This study deals with the conditioning of aural memory to recognize and identify sounds singly and in linear and vertical organization. Why. This study develops and strengthens the student's basic recognition and recall abilities which contribute to his sensitivity to music.

What ______________________________

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Why ______________________________

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Secondary Reason(s) ______________________________

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Item 15

Fractionation VI	Translative Skills
Sample Statements	What. This study deals with graphic systems (historical, traditional, contemporary) used for the storage and retrieval of music.
	Why. A knowledge of notation permits the student to use music which is not available to him in an aural form, and to store and retrieve his own musical ideas.

What ____________________

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Why ____________________

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Secondary Reason(s) ____________________

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Item 15

Basic Policy on Non-Music Substance for the Curriculum

While the following studies cannot be considered as inherent to the study of music, they are highly pertinent to the life of the musician. Of most immediate concern is the study of the philosophical, psychological and procedural factors associated with learning and teaching which are generally covered by Music Education courses.

For the purpose of creating definitive curriculum policy, this general subject area has been broken down into two broad parts, Learning-Teaching and Policy, Systems and Procedures in Schools.

Fractionation VII Learning-Teaching

Sample Statements

What. This study deals with the processes by which individuals develop critical thinking, musical skills, the capacity to function productively, and the implications of this for teaching.

Why. The analysis of learning styles and processes allows the individual to assess and consciously develop his personal means of intellectual growth.

What ____

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Why ____

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Secondary Reason(s) ____

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Item 15

Fractionation VIII	Policy, Systems and Procedures in Schools
Sample Statements	What. In this study the logic and mechanics of various organizational structures in schools are examined for their relevance to music education. Why. This study would probably not be appropriate for the freshman year.

What ____

Why ____

Secondary Reason(s) ______________________________

RBT:vdS
February, 1970

THE RELATIONSHIPS AND STRUCTURE OF CURRICULUM CONTENT

In the previous step of this study the specific nature of the various areas of curriculum content and the major reasons for the inclusion of these content areas in the freshman curriculum were defined. The next phase is concerned with the preparation of policy on how this content should be interpreted. In this there are two steps. The first deals with the relationships and structure of content, the second with the general manner in which content areas will function within the total curriculum.

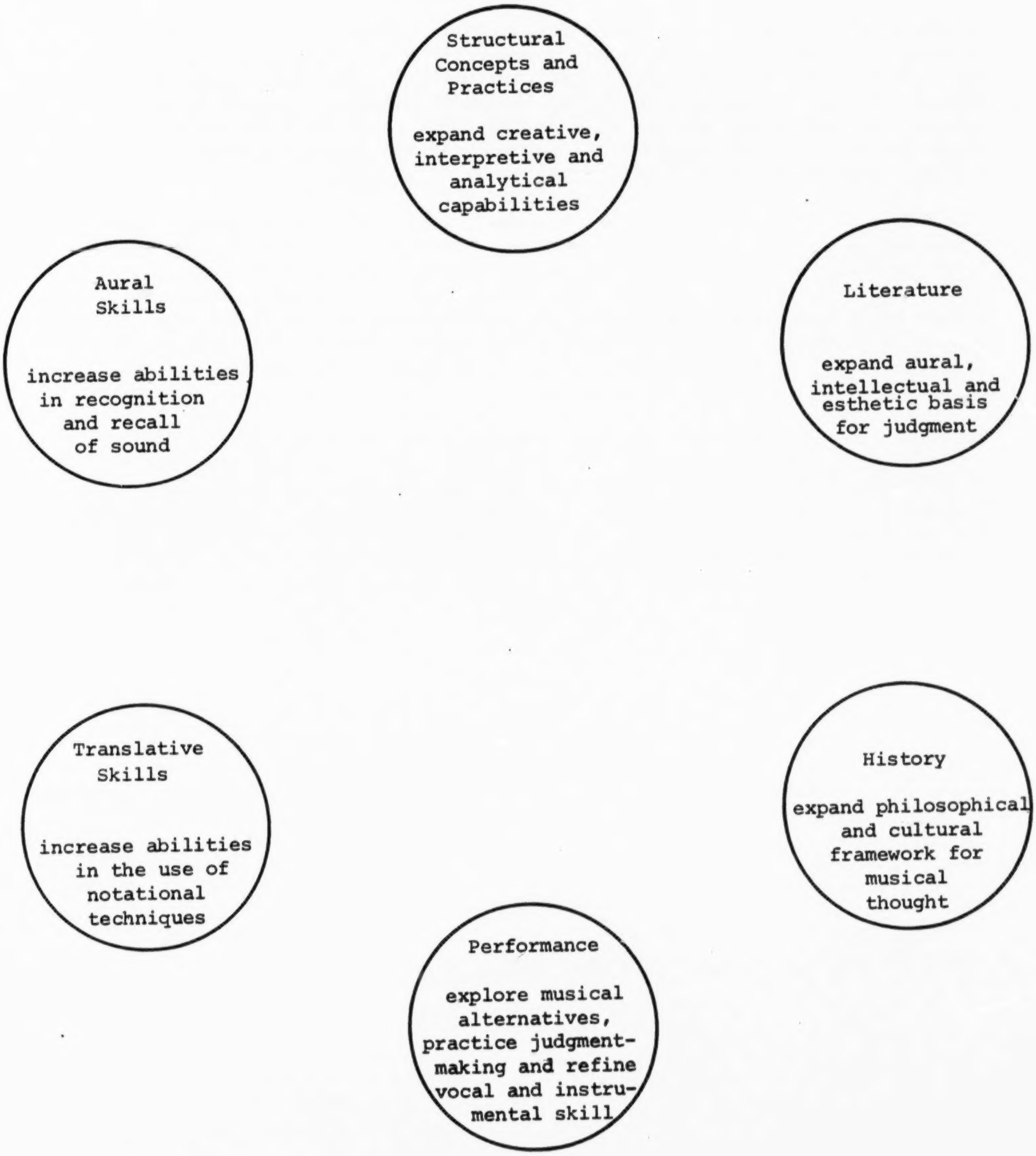
Item 16C is a chart containing the six basic music curriculum areas. From the primary, not the secondary, statements formulated by each faculty under "Why" on Item 15, key words or phrases describing purpose should be written under each fractionation heading (see sample copy - Item 16B). Using the transparency and transparent arrows the relationship of fractionations should be plotted. All arrows contain the words "in order to" and may be placed between any fractionations where it is deemed rational to join two statements with the words "in order to".

When the plotting of arrows has been completed the relationships of various fractionations will be apparent. It will also be obvious that some areas of the total curriculum are supportive and that one area of the curriculum becomes the core or hub of the total educational substance. By establishing this core of the curriculum and the interrelationships of the various supportive curriculum areas, decisions on the structure of the total curricular content and the function of each area of subject matter can be made.

Item 16B

MMCP COLLEGE
CURRICULUM STUDY

SUBJECT MATTER RELATIONSHIPS
SAMPLE CHART



Structural Concepts and Practices

expand creative, interpretive and analytical capabilities

Aural Skills

increase abilities in recognition and recall of sound

Literature

expand aural, intellectual and esthetic basis for judgment

Translative Skills

increase abilities in the use of notational techniques

History

expand philosophical and cultural framework for musical thought

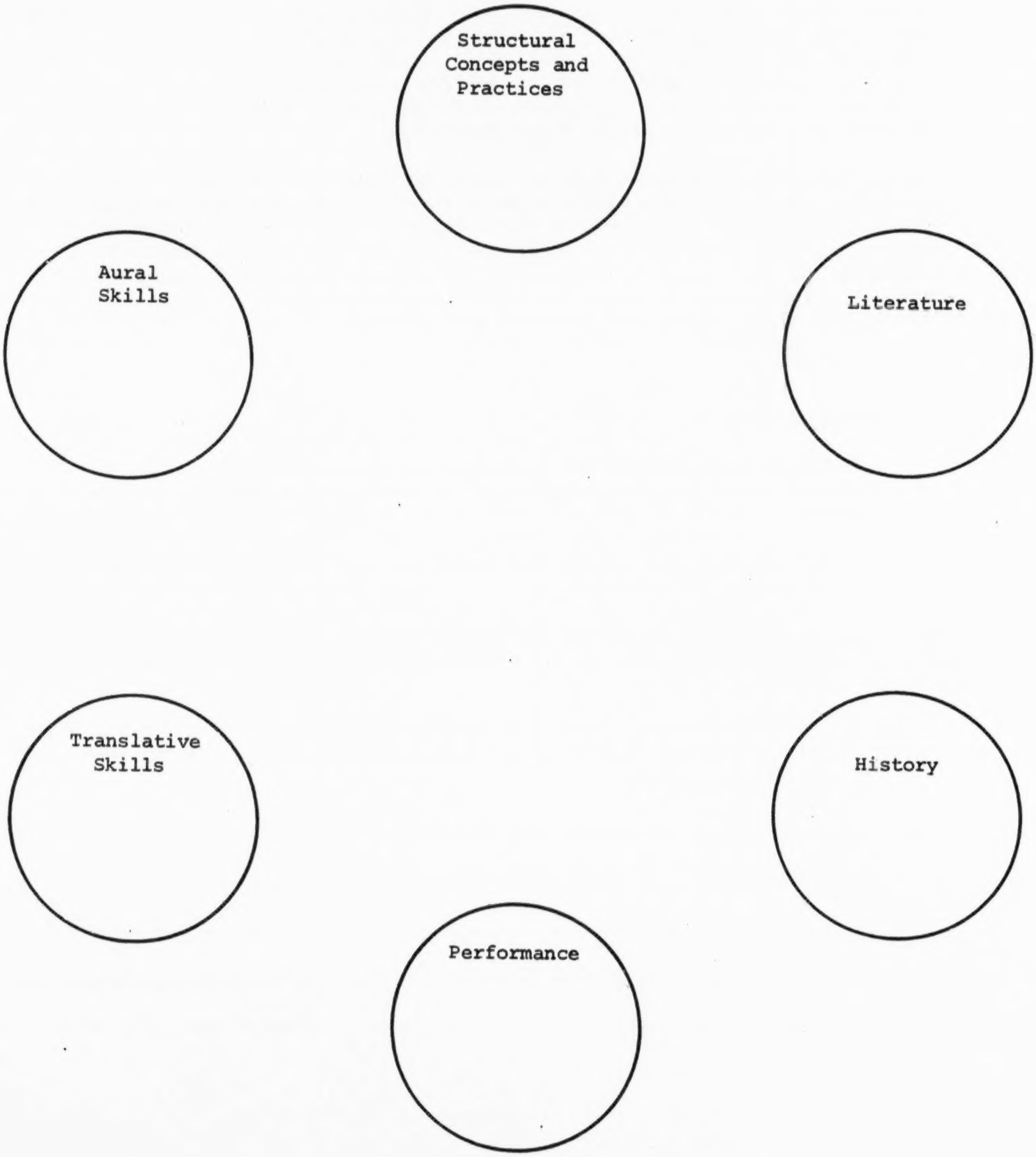
Performance

explore musical alternatives, practice judgment-making and refine vocal and instrumental skill

Item 16C

MMCP COLLEGE
CURRICULUM STUDY

SUBJECT MATTER RELATIONSHIPS PLOTTING CHART



BASIC POLICY - SUBSTANCE INTERPRETATION

Item 17 deals with the function of each substance area for the freshman year. Under each fractionation heading there is a statement which should be completed by the faculty. Each completed statement should be consistent with previous statements made in Item 15 and the structural relationships made in Item 16C. In fact, these previous policy statements should be used as the sources of logic which govern these decisions.

As in Item 15 sample statements have been provided for each fractionation. Although there are three sample answers in each case representing relatively opposing points of view, none of these answers need be accepted by any faculty. They are intended only to demonstrate the types of judgment which are necessary at this stage of the study. It must be emphasized that sample answers are provided to stimulate not to stifle creative and analytical thought in these policy decisions of each college.

I. Music History.

Previous decisions on the inclusion and relationships of subject matter infer that "Music History" in the freshman year be considered:

Sample Statements.

a. as a curriculum entity approached through units based on the sociology of music.

b. as a curriculum entity approached through a chronological survey of historical periods and musicians, tying in appropriate literature.

c. to be an integral part of a larger curriculum for the purpose of clarifying and amplifying musical conditions, experiences, and frames of reference.

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Item 17

II. Music Literature.

Previous decisions on the inclusion and relationships of subject matter infer that "Music Literature" in the freshman year be considered:

Sample Statements.

a. as a study concentrated on one or more periods, styles or idioms.

b. as a study which deals with a systematic survey of the evolution of music through forms, styles or other musical resources.

c. as an integral part of a larger curriculum for the purpose of exploring alternative perspectives and uses of fundamental musical concepts.

III. Performance.

Previous decisions on the inclusion and relationships of subject matter infer that "Performance" study in the freshman year be:

Sample Statements.

a. patterned after the systems and experiential conditions of professional performing organizations (with private study considered as an independent performance area).

b. handled through faculty controlled ensemble and large-group organizations which expose the student to a variety of literature and to the expert judgments, techniques and interpretive practices of mature musician-conductors (with private study considered as a related but independent performance area).

c. considered to be an integral part of a larger curriculum, with groups flexibly organized to allow for student exploration of musical concepts which arise from the total learning milieu (with private study considered as a highly related experience).

Item 17

IV. Structural Concepts and Practices.

Previous decisions on the inclusion and relationships of subject matter infer that the study "Structural Concepts and Practices" in the freshman year be focused on:

Sample Statements.

a. the acquisition of information and techniques related to scale formations, intervals, triadic structures, keyboard harmony, melodic forms and two- or three-part polyphony.

b. the mastery of certain techniques of vertical and linear pitch organization from 18th Century idioms but including a brief exploration of other periods or structural considerations.

c. a broad exploration of musical concepts of pitch, timbre, form, rhythm, and dynamics through a program of diversified musical experiences centered around compositional activity.

V. Aural Skills.

Previous decisions on the inclusion and relationships of subject matter infer that the study of "Aural Skills" should be:

Sample Statements.

a. developed through an organized series of listening experiences closely aligned with the study of "Music Literature".

b. developed through sequences of technical exercises which also involve skills of notation and vocal pitch production.

c. considered as an integral part of creative, interpretive, analytical and performance experience.

Item 17

VI. Translative Skills.

Previous statements on the inclusion and relationships of subject matter infer that the study of "Translative Skills" be:

Sample Statements.

a. focused on systems of notational computation, the use of notational devices, and notational analysis.

b. developed through sequences of technical exercises which also involve skills of aural memory and vocal pitch production.

c. regarded as an integral part of creative, interpretive, analytical and performance experience.

VII. Learning-Teaching.

Previous statements on the inclusion of subject matter infer that the study of "Learning-Teaching" in the freshman year should be:

Sample Statements.

a. approached through classes dealing with contemporary learning theory.

b. approached through an analysis of teaching methods and styles.

c. approached through the identification and analysis of personal learning processes with contemporary cognitive theory serving to clarify experiential conditions.

Item 17

VIII. Policy, Systems and Procedures in Schools.

Previous statements on the inclusion and relationships of subject matter infer that the study of "Policy, Systems and Procedures in Schools":

Sample Statements.

a. be concerned with the analysis of various philosophical rationales underlying school music activities.

b. be concerned with the philosophical justification for the educational experience within the immediate educational environment, the college.

c. be reserved for later school years.